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SUPPLEMENTAL EXPERT REPORT OF DR. JEFFREY B. LIEBMAN

April 3, 2019

I. EXECUTIVE SUMMARY

1. The communities of Cuyahoga County and Summit County, Ohio (the “Communities”) are in the midst of a public health emergency due to the growth in the use of prescription opioids and the harms resulting from such use.¹ Thousands of residents have died; hundreds of infants have suffered the ill effects of neonatal abstinence syndrome; families have been separated due to the struggles with addiction; and neighborhoods have declined.² The need to respond to opioid-related social harms have diverted public sector resources from other valuable purposes while still leaving many harms unaddressed.³

2. I have been asked to present opinions related to (i) identifying how the Communities can best utilize the tools and practices available to implement programs aimed at furthering the communities’ efforts to ameliorate and abate the crisis they face; and (ii) estimating the cost of providing these services.

3. Making rapid and deep progress in these two communities will require both a substantial increase in resources and effective coordination of those resources. As set forth in the Expert Report of Dr. Caleb Alexander, a community opioid abatement plan has many components, including initiatives to reduce opioid oversupply and encourage safe opioid use; and to identify and treat individuals with Opioid Use Disorder (OUD). Here I propose an Abatement Plan for the Cuyahoga and Summit communities, which includes measures to achieve the goals discussed by Dr. Alexander. The components of the Abatement Plan outlined below can be summarized in the following four categories: Treatment; Harm Reduction; Primary Prevention; and System Coordination.

- **Treatment** includes additional capacity for detoxification, inpatient and outpatient therapy, recovery housing, and medication-assisted treatment (or MAT), resources for

¹ See T. Gilson Deposition Tr. 176:14-178:12; A. Vince Deposition Tr. 186:6-187:7.

² I understand that the Expert Report of Jonathan Gruber documents the growth in opioid shipments in the last two decades, the relationship between this growth and opioid-related mortality, and how the initial growth from the mid 1990’s to 2010 precipitated the rapid growth in illicit opioid mortality in recent years. I further understand that the Expert Report of David Cutler further documents the impact of defendants’ misconduct on social harms including mortality, crime, and the demand for foster care services.

³ I understand that the Expert Report of Thomas McGuire on damages estimates the costs faced by Bellwether governments due to the opioid crisis.

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better connecting individuals to treatment services, and targeted interventions with high priority populations – those in jail, families in the child welfare system, and opioid-using pregnant women and new mothers.

- **Harm reduction** includes distributing naloxone, resources for needle exchange, and interventions to treat and reduce the spread of HIV and hepatitis C among intravenous drug users, as well as the provision of housing support for vulnerable populations that have high rates of opioid use.
- **Primary prevention** includes media campaigns to reduce opioid use and misuse and decrease the stigma of seeking treatment, school-based prevention programs, resources for law enforcement, drug disposal programs, and medical provider education.
- **System coordination** involves data collection and surveillance to track the evolution of the epidemic in the communities so that resources can be efficiently deployed to their most effective use, staffing to coordinate the overall effort so that the different pieces of the plan work effectively together, and resources for law enforcement so that individuals can be more effectively connected to services and appropriate supervision.

4. The types of programs and services that fall into each of these categories, as well as recommended elements of such programs and services, are described in further detail in the Expert Reports of Dr. Alexander, Dr. Theodore Parran, and Dr. Anna Lembke. As noted by Dr. Alexander, while there are many elements of an opioid-related abatement program, there is not a one-size fits-all approach to abating the problem in all communities. As set forth in my opinions below, this report focuses on and sets forth the scope of the programs and services recommended in the Abatement Plan for the Cuyahoga and Summit communities and ultimately the costs of efforts required to abate the opioid crisis in these communities.

II. QUALIFICATIONS

5. I am the Malcolm Wiener Professor of Public Policy at the Harvard Kennedy School, where I direct the Taubman Center for State and Local Government as well as the Government Performance Lab (GPL).

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6. I received a Ph.D. in Economics from Harvard University in 1996. I have published numerous peer-reviewed journal articles, essays, and book chapters. I teach courses on the Economic Analysis of Public Policy, American Economic Policy, and Government Turnarounds. I specialize in Public Finance and Health Economics as well as state and local government policies. My research focuses on tax, budget, and health policy, impact evaluations of social programs, and strategies for making government social service agencies more effective. My CV is included as Appendix A.

7. I have twice served in government. From 1998-1999, I was Special Assistant to the President for Economic Policy and coordinated the National Economic Council's Social Security reform technical working group. From 2009 to 2010, I worked at the Office of Management and Budget, first as Executive Associate Director and Chief Economist and then as Acting Deputy Director. In both periods of government service, I supervised the development of cost estimates of complicated multi-faceted government initiatives, including Social Security reform, the American Recovery and Reinvestment Act of 2009, and the Affordable Care Act of 2010.⁴

8. The Government Performance Lab (GPL) at the Harvard Kennedy School, which I founded in 2011 and direct, provides pro bono technical assistance to state and local government agencies, mostly social service agencies, to help them improve the results they achieve for their residents. We help agencies undertake performance improvement projects by embedding recent graduates of public policy, law, and business schools in government agencies, typically for 18-24 months.

9. To date, GPL has undertaken close to 100 projects in more than 30 states. These projects include providing assistance in the areas of behavioral health and homelessness,

⁴ American Recovery and Reinvestment Act of 2009: Law, Explanation and Analysis: P.L. 111-5, as Signed by the President on February 17, 2009. Chicago, Ill.: CCH, 2009; United States. Compilation Of Patient Protection and Affordable Care Act: as Amended through November 1, 2010 Including Patient Protection and Affordable Care Act Health-Related Portions of the Health Care and Education Reconciliation Act of 2010. Washington: U.S. Government Printing Office, 2010.

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criminal justice, education and jobs, and children and families. We currently have 40 employees, nearly all embedded in state, city, and county agencies around the country.⁵

10. A significant share of GPL's work has involved substance use issues. For example, we worked with the states of Connecticut and Florida to develop systems to better connect parents in their child welfare systems with substance use treatment. We have worked with Denver, Colorado and the Commonwealth of Massachusetts on identifying chronically homeless individuals with complicated mental health and substance use challenges and prioritizing them for supportive housing. We worked with the Louisville, Kentucky Metro Jail on an initiative to connect releasees to substance use treatment. We worked with Bernalillo County, New Mexico (Albuquerque), on how to most effectively spend the resources from a new behavioral health levy to combat addiction and other behavioral health challenges.⁶

11. I am being compensated on an hourly basis for my work on this matter at a rate of \$900 per hour and \$1,000 per hour for any deposition or trial testimony I am required to provide. I am also being reimbursed for my out-of-pocket expenses. My compensation does not depend on the outcome of the case or the substance of my opinions.

12. The opinions and conclusions in this report are based on information and documentation available to me at this time, and I reserve the right to supplement and revise the opinions and conclusions expressed in this report based on additional evidence or information provided to me after the date of this report. The materials I considered in preparing my analysis and forming my conclusions are attached as Appendix B.

III. SUMMARY OF OPINIONS

13. In this report I present the following opinions and describe the evidence and analysis related thereto:

14. I conclude that there is a framework within the area of applied economics by which an economist can reasonably evaluate (a) the level of abatement resources needed for the next 15 years in the communities of Cuyahoga County and Summit County, Ohio, to abate the

⁵ A full list of the projects I have overseen by jurisdiction is set forth at <https://govlab.hks.harvard.edu/projects> and listed in Appendix E.

⁶ Id.

opioid crisis and (b) the cost of those resources. In particular, an economist can use data regarding the target populations and their service needs as well as community input and the opinions of other medical and epidemiological experts to develop the scope of programming needed in order to address the opioid crisis in these communities. As discussed further below, the economist can utilize standard and widely accepted tools of empirical economic analysis and public sector budgeting, as informed by professional experience and judgment, to estimate the costs of providing this programming.

15. My analysis estimates the cost of abatement programming required from 2020-34 to abate the harms in the two communities resulting from the opioid crisis. The economic literature on public health recognizes that it is not realistic to assume that health policies will help all affected individuals -- even the best designed policies will not be successful in reaching every member of a target population, and some addicted individuals will choose not to receive treatment when available.

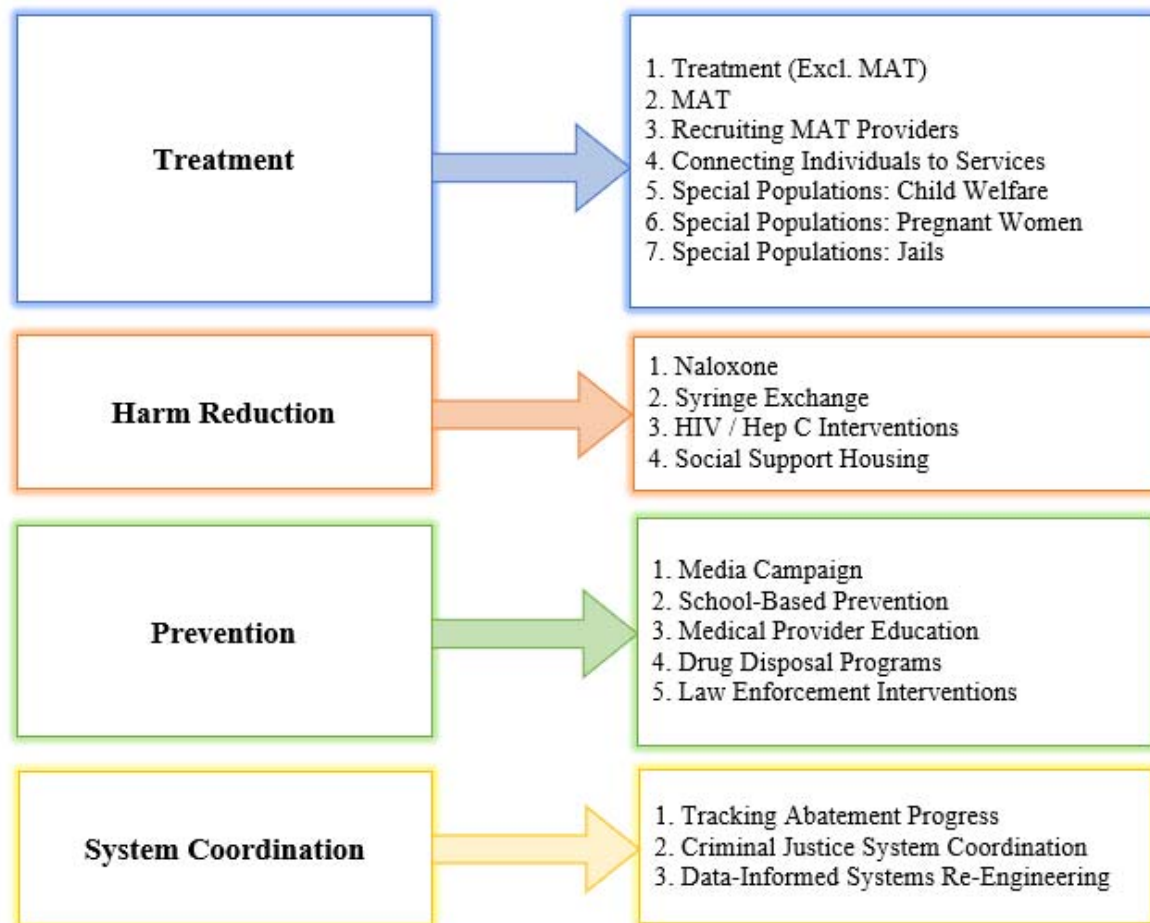
16. Instead, the analysis attempts to estimate the costs to implement a policy based on a feasible and realistic view of what can be achieved. Estimates of the cost of treatment -- the largest component of cost under the Abatement Plan -- are based on the view that, even with intensive expansion of resources, the number of individuals with opioid use disorder (OUD) who receive treatment (currently about 20 percent of the OUD population) will double to 40 percent, and the number of individuals who currently receive Medication Assisted Treatment, roughly seven percent of the OUD population, will quadruple to 27 percent. These projections are discussed further below.⁷

17. As discussed further below, the Abatement Plan identifies four major area of needed services: treatment programs, harm reduction programs, prevention programs, and system coordination efforts. Several specific programs are identified in each category (see Figure 1). This report presents costs estimates for seven major programs which are expected to account for a large portion of the program costs. I intend to supplement this report with cost estimates for the remaining programs after reviewing information recently provided in discovery

⁷ My estimates of plan costs are not reduced to reflect costs arising in connection with heroin use in the community where the individual had never used prescription opioids.

and related information. My analysis does not address how abatement costs should be shared among various entities or parties.

Figure 1
Elements for the Community Abatement Strategy
Cuyahoga and Summit Counties



18. Based on my study of the abatement needs of the Cuyahoga and Summit communities and application of the methodologies and analysis described in this report, I estimate that implementation of the programs of Abatement Plan evaluated to date will cost \$5.0 billion in Cuyahoga County and \$2.2 billion in Summit County over the next 15 years. These totals reflect estimates of the largest categories of costs currently faced by the Cuyahoga and Summit Communities in abating the opioid crisis as well as estimates of additional costs needed to make greater progress in abating opioid disorders. In addition, I am informed that the costs of

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certain services contemplated in the Plan have been or will be provided in documents or testimony from the Counties. To the extent that the costs of additional elements of the Plan are required, I am prepared to supplement this Report. Estimates of the annual elements of the costs of each of these programs for which costs have been estimated and the sources of the data used in developing these estimates are reported in an appendix to this report.⁸ I understand other expert reports also discuss the effectiveness of these interventions at reducing mortality and morbidity associated with opioid addiction.⁹

19. Available studies indicate that an intensive effort like the one described in this plan is needed to address the problems faced in these communities because of the opioid epidemic and further indicate that implementation of such a range of programs will result in reduced mortality and morbidity associated with opioid addiction.¹⁰

20. Because it is possible that the epidemic will evolve in ways that either reduce or increase the need for resources relative to my primary estimates, it is appropriate for me as an economist to provide a range of estimates for lower cost and higher cost scenarios.¹¹ It is also important to build in feedback mechanisms into the Abatement Plan, so that the level of abatement resources and the allocation of those resources can be adjusted over time as new information about needs becomes available.

⁸ The Abatement Plan provides estimates for certain of the largest resource needs in these communities. In particular, and as set forth in Tables 1 and 2 below, costs are estimated for the following categories: treatment, MAT, recruiting providers to administer MAT, naloxone, the syringe exchange program, a mass media campaign, and school-based prevention. In addition, I am informed that the costs of certain services contemplated in the Plan have been or will be provided in documents or testimony from the Counties. To the extent that the costs of additional elements of the Plan are required, I am prepared to supplement this Report.

⁹ I understand that these are discussed in the Expert Reports of Anna Lembke, Caleb Alexander, and Katherine Keyes.

¹⁰ Pitt, Allison L., Keith Humphreys and Margaret L. Brandeau. "Modeling Health Benefits and Harms of Public Policy Responses to the US Opioid Epidemic." *AJPH Open Themed Research* Vol. 108 no. 10 (Oct 2018): 1394-1400. Pitt, et al. conclude that "[p]olicies that focus on services for currently addicted people provide health benefits immediately without causing harm. However, no epidemic has ever been averted solely by treating single affected cases. Instead, portfolios of policies will likely be required, including those that prevent addiction, treat addiction, and mitigate its effects." (at 1399).

¹¹ As an example, see the range of projections of future opioid deaths presented in M. Blau, "STAT forecast: Opioids could kill nearly 500,000 Americans in the next decade," <https://www.statnews.com/2017/06/27/opioid-deaths-forecast> (June 27, 2017).

21. The rationale and justification for these opinions are set forth in more detail in the remainder of this report.

IV. BACKGROUND ON THE OPIOID EPIDEMIC IN CUYAHOGA AND SUMMIT COUNTY AND UNMET NEEDS

22. The nationwide opioid epidemic is hitting the Cuyahoga and Summit communities particularly hard. The Cuyahoga County Opiate Task Force has estimated that as of 2016, 73,200 Cuyahoga residents misuse or abuse prescription opioids each year in the county and that 20,562 of them make the switch to heroin each year.¹² Opioid-related overdose deaths in Cuyahoga County increased from 93 in 2005; to 191 in 2012; to 524 in 2017 as the use of Fentanyl spread.¹³ In Summit County, the number of opioid-related overdose deaths rose from less than 20 in 2005 to 60 in 2012 to 190 in 2017.¹⁴ I understand that the Expert Report of Jonathan Gruber documents that the per capita overdose death rate in Cuyahoga County is among the highest county-level rates in the nation. And these mortality rates understate the true magnitude of opioid-related health risks since many additional individuals overdosed but were saved by application of opioid antagonists such as naloxone by first responders. The Cuyahoga medical examiner reports that nearly 900 people were saved in Cuyahoga county through project DAWN (Deaths Avoided with Naloxone) in 2017.¹⁵

23. Hundreds of children are being adversely affected by the opioid crisis in both communities. Between 2013 and 2017, Summit County reported 426 hospitalizations due to neonatal abstinence syndrome (NAS) and Cuyahoga County reported 629.¹⁶ In 2017 alone, Summit County reported 79 hospitalizations due to NAS in 2017; Cuyahoga County reported 137 NAS hospitalizations.

24. As discussed further below, obtaining information about local conditions and service gaps from local experts is a key element in the design of government policy and is a

¹² Cuyahoga County Opiate Task Force Report, 2016.

¹³ Source: Multiple Causes of Death Data, accesses on CDC Wonder.

¹⁴ Source: Multiple Causes of Death Data, accesses on CDC Wonder.

¹⁵ Cuyahoga County Medical Examiner's Office, Heroin/Fentanyl/Cocaine Related Deaths in Cuyahoga County, http://medicalexaminer.cuyahogacounty.us/pdf_medicalexaminer/enf-US/HeroinFentanylReports/090718-HeroinFentanylCocaine-ME-report-Aug.pdf (Sep. 17, 2018), p. 5.

¹⁶ Source: https://odh.ohio.gov/wps/wcm/connect/gov/4cad708c-ba99-4b8b-b425-01cfef119c5d/2017+NAS+County+Table+12.3.2018.pdf?MOD=AJPERES&CONVERT_TO=url&CACHEID=ROOTWORKSPACE.Z18_M1HGGIK0N0JO00QO9DDDDM3000-4cad708c-ba99-4b8b-b425-01cfef119c5d-muueFzr

standard element in the framework used in GPL projects. In the initial phase of this project, I had extensive conversations about opioid-related issues with local government officials, law enforcement officials, medical practitioners, and social service providers. A list of individuals interviewed in the process is attached as Appendix C. Each of these individuals stressed that needs for opioid-related services often go unmet due to the limitations of available resource and related obstacles to providing opioid-related services. This section briefly summarizes some observations based on these conversations, information provided in response to these conversations, and transcripts of depositions of community members. My abatement plan takes into account the information I learned in these interviews.

25. My discussions with local law enforcement officials indicated that EMS, police, and fire department resources are being diverted from other activities in order to respond to opioid overdoses. The Cleveland Police Department reports that officers who previously were assigned to disrupting the operations of drug dealers now spend all of their time investigating overdose deaths.¹⁷

26. While additional treatment resources have been added, there is neither enough treatment capacity nor sufficient coordination to connect individuals who need treatment for opioid addiction to get services. In addition, in Summit County, the director of the ADM Board reports that only about 20 percent of individuals with overdose deaths had previously received services and that their working assumption is that only 10 percent of the people needing help get it.¹⁸ The Summit Opioid Task Force reports wait times of 26 days for residential treatment.¹⁹ However, local experts also note that people can only be put on wait lists for services after they have had their need assessed, and if there were a sufficient number of assessors, the waiting lists for treatment would appear much greater.²⁰ Lack of 24-7 access to treatment misses the often-narrow window of opportunity when a person may be open to entering treatment, for example after an overdose.

¹⁷ Deposition of Gary Gingell, November 20, 2018, pp. 237, 175-176.

¹⁸ Call with G. Craig of Summit County Alcohol, Drug Addiction & Mental Health Services Board, July 3, 2018.

¹⁹ Summit County Opiate Task Force, Key Stakeholders Annual Meeting, Meeting Notes 6/25/2018 (SUMMIT_001164135), at p. 2.

²⁰ Comment by D. Skoda at Round-table Meeting with Representatives of the Summit County Community, July 11, 2018.

27. Based on this review and my experience as an economist and policy analyst, significant needs in the Cuyahoga and Summit Communities are currently going unmet and significant additional resources are required in order to meet the demand for opioid-related services.

V. FRAMEWORK AND METHODOLOGY

28. As noted above, the development of the Abatement Plan for the Cuyahoga and Summit Communities and estimation of the funding needed for this plan applies the general methodological framework used in my prior analysis of government programs, in my academic and government work, as well as in the nearly 100 projects that have been implemented under my direction at the GPL. My framework follows the standard approaches used by the Congressional Budget Office²¹, the President's Office of Management and Budget²² and the Government Accountability Office²³ in estimating costs and projecting budgets.

29. To estimate the cost of implementing the Abatement Plan, I first gathered qualitative information about the need for opioid-related services in the Cuyahoga and Summit communities, including assessments of the populations in need of services, existing infrastructure and service gaps, and information on the contours and severity of the epidemic. This initial information gathering phase of my analysis involved meetings and phone calls with community members involved in addressing the opioid crisis, including medical service providers, social service providers and individuals in government. Information gained in this review helped to identify the services needed in the Cuyahoga and Summit communities, the extent to which services can be expanded, the length of the "ramp up" period, and the length of time for which services are likely to be needed.

²¹ Congressional Budget Office, "How CBO Prepares Cost Estimates," (February 2018) (<https://www.cbo.gov/system/files/115th-congress-2017-2018/reports/53519-costestimates.pdf>)

²² Executive Office of the President, Office of Management and Budget, "Circular No. A-11, Preparation, Submission and Execution of the Budget," (June 2018).

²³ Government Accountability Office, "GAO Cost Estimating and Assessment Guide," (March 2009) (<https://www.gao.gov/new.items/d093sp.pdf>)

30. Second, I have collected data measuring the extent of the opioid crisis and current response efforts in the Cuyahoga and Summit communities. This has included the review of public data on the extent of OUD; analyses on the quality and reliability of available OUD data; and information on OUD treatment programs in these communities. This analysis has also included efforts to estimate the costs of opioid treatment, harm reduction, prevention, and system coordination.

31. Finally, I have reviewed the published literature on remedies to the opioid epidemic, on the effectiveness of proposed interventions, and on the experience of other communities that have adopted similar interventions.²⁴

32. As noted, the approach of identifying the target population, assessing population needs, selecting the set of programs that can best meet these needs, and then estimating the costs of providing the programming is widely applied in public economics and policy analysis. Evaluating community needs based on quantitative data and then verifying the estimates based on information obtained from local experts is also standard practice. Analysis of related topics such as program design and implementation, budgeting, and forecasting are central to the curriculum at the Harvard University's Kennedy School of Government where I teach courses in the "Economic Analysis of Public Policy" and "Government Turnarounds" which directly relate to these topics. As GPL's name suggests, setting performance-based goals for projects and implementing on-going monitoring and continuous improvement efforts to enable projects to meet their goals is a significant part of the Lab's work and has been a primary emphasis of the projects that I direct there. Policy design and evaluation also requires the exercise of

²⁴ Examples of the literature reviewed include: Centers for Disease Control and Prevention, *Evidence-Based Strategies for Preventing Opioid Overdose: What's Working in the United States*. 2018. Brooklyn, Johan and Stacey C. Sigmon, "Vermont Hub-and-Spoke Model of Care For Opioid Use Disorder: Development, Implementation, and Impact," *Journal of Addiction Medicine* 2017, 11(4): 286-292. Hernandez, Yamilette et al., "How Massachusetts, Vermont, and New York are Taking Action to Address the Opioid Epidemic," *American Journal of Public Health*, 2018, 108:12, 1621-1622. U.S. Department of Health and Human Services (HHS), Office of the Surgeon General, *Facing Addiction in America: The Surgeon General's Spotlight on Opioids*. Washington, DC: HHS, September 2018. National Academies of Sciences, Engineering, and Medicine. 2017. *Pain management and the opioid epidemic: Balancing societal and individual benefits and risks of prescription opioid use*. Washington, DC: The National Academies Press.

professional judgement, which I have developed over the past 22 years in undertaking related types of analyses.

VI. OVERVIEW OF ABATEMENT PLAN

A. Origins of the Abatement Plan

33. Communities around the U.S. that are showing incipient progress in reducing opioid use and opioid deaths have followed a common set of strategies. They have increased the availability of treatment, including MAT. They have reduced obstacles that prevent individuals from obtaining access to the available treatment. They have invested in harm reduction, increasing access to naloxone and fentanyl test strips to prevent deaths among those still misusing opiates and taking steps to minimize the spread of HIV and Hepatitis C among heroin users. They have invested in primary prevention to reduce the number of individuals that newly develop Opioid Use Disorder. They have put resources into system coordination so that new developments are tracked and quickly responded to, resources are allocated effectively, and the rate of individuals falling through the cracks because of failed handoffs is minimized.

34. The Abatement Plan outlined and evaluated in this report builds on approaches that have been implemented in other areas and shown to be effective.²⁵ The Abatement Plan also builds on abatement strategies currently being developed in the Cuyahoga and Summit communities.

35. For example, in February – March 2018, Summit County convened a group of government and other stakeholders in the County to identify resources, gaps, and barriers in the existing systems for responding to the opioid crisis.²⁶ The group also aimed to better meet treatment needs of adults with opioid addiction in contact with the criminal justice system. At this meeting, results of a recent Sequential Intercept Mapping (SIM) exercise were presented,

²⁵ See, for example: Centers for Disease Control and Prevention, Evidence-Based Strategies for Preventing Opioid Overdose: What's Working in the United States. 2018; U.S. Department of Health and Human Services (HHS), Office of the Surgeon General, Facing Addiction in America: The Surgeon General's Spotlight on Opioids. Washington, DC: HHS, September 2018. National Academies of Sciences, Engineering, and Medicine. 2017. Pain management and the opioid epidemic: Balancing societal and individual benefits and risks of prescription opioid use. Washington, DC: The National Academies Press.

²⁶ See Summit County, Sequential Intercept Mapping and Action Planning for Opioid Epidemic Response, March 20, 2019 (SUMMIT_000349556).

which provided a comprehensive picture of how people with substance use disorders and co-occurring disorders flow through the Summit County criminal justice system, including six “intercept points” and an action plan.²⁷ The Abatement Plan adds resources at many of these intercept points to better connect individuals in need of opioid use treatment and other services to these services and implements many of the types of programs recommended in the mapping exercise.

36. Similarly, the Cuyahoga County Opiate Task Force has proposed and implemented a number of strategies to combat the opioid epidemic in conjunction with its partners, including, but not limited to: (1) increasing naloxone accessibility to the community by making the reversal kits available through pharmacies and Project DAWN locations; (2) educating local law enforcement on the benefits of carrying naloxone; (3) participating in bi-annual drug take-back days; (4) establishing medication drop boxes; (5) expanding substance use disorder services in MetroHealth emergency departments; (6) providing Safer Opioid Prescribing town hall trainings for prescribers; and (7) targeted media campaigns for heroin/fentanyl prevention and awareness.²⁸ The Abatement Plan incorporates and expands on many of these programs.

37. Furthermore, in their planning exercises, the Cuyahoga and Summit communities have recognized the need for improved coordination of systems to expand access to MAT. One of the tools for accomplishing this the Hub-and-Spoke Model, described in the Alexander Report, and previously implemented in Vermont.²⁹ The Hub-and-Spoke model uses a limited number of specialized, regional addictions treatment centers (called “hubs”) that collaborate with dispersed providers spread elsewhere in the community (called “spokes”). The hubs provide intensive treatment to patients and consult with medical providers treating patients in the general

²⁷ The six intercept points identified are Prevention/Treatment/Regulation, First Contact and Emergency Services, Initial Detention/Initial Court Hearings, Jails and Courts, Reentry, and Probation/Community Supervision.

²⁸ See Cuyahoga County Board of Health, “2018 Injury Prevention Report,” available at http://opiatecollaborative.cuyahogacounty.us/pdf_OpiateCollaborative/en-US/2018AnnualReport.pdf, pp. 2-3, 7; Cuyahoga County Opiate Task Force Report 2016, available at <http://www.ccbh.net/wp-content/uploads/2017/07/2016-CCOTF-Annual-Report.pdf>, at pp. 4, 5.

²⁹ Brooklyn, Johan and Stacey C. Sigmon, “Vermont Hub-and-Spoke Model of Care For Opioid Use Disorder: Development, Implementation, and Impact,” *Journal of Addiction Medicine* 2017, 11(4): 286-292.

practice spokes. Under this model, each MAT patient has an established hub, a single MAT prescriber, a pharmacy home, access to a general practice provider who are the medical community, and nurses and clinicians at spoke locations. The approach helps avoid coordination problems resulting from state and federal regulations that limit the ability of providers to offer different forms of MAT (e.g., methadone, buprenorphine, and naltrexone), and facilitates the provision of counselling and related services.

B. Elements of the Abatement Plan

38. As summarized in Figure 1 above, there are four elements of the Abatement Plan:

- Treatment for individuals with OUD
- Harm reduction, including widespread distribution of naloxone and resources for syringe exchanges;
- Primary prevention programs, including media campaigns, school-based prevention programs, and expanded resources for law enforcement; and
- System coordination to track the evolution of the epidemic, coordinate the different pieces of the abatement effort, and improve handoffs between the medical and criminal justice systems.

39. The remainder of this section briefly describes the key elements of the plan. Additional details of the Abatement Plan, including the parameters used in projecting costs, are presented in Appendix D, which presents the cost calculation and identifies the supporting data.

C. Overview of Treatment Services Under Abatement Plan

40. Treatment elements of the Abatement Plan include the provision of treatment services, such as detoxification, inpatient and outpatient therapy, recovery housing, and medication-assisted treatment (or MAT), resources for better connecting individuals to treatment services, and targeted interventions with high priority populations – those in jail, families in the child welfare system, and opioid-using pregnant women. Each of these is briefly addressed in turn.

1. Treatment Services: Non-MAT

41. The American Society of Addiction Medicine (ASAM) identifies the range of services a community needs to provide to appropriately treat addiction and substance-related disorders. These include services for managing withdrawal and related symptoms as well as the provision of a range of psychological counselling and support services. The Abatement Plan would expand the range and scale of services available in the Cuyahoga and Summit communities, including detoxification, residential, partial hospitalization, intensive outpatient, outpatient, recovery housing, and treatment facilities for parents with children.

42. Estimates of the cost of providing treatment services (other than MAT), including the costs of the facilities, under the Abatement plan are summarized in Appendix D, Tables C.1 and S.1 in Appendix D. The cost estimates anticipate that the number of individuals that receive treatment will ramp up over four years such that the number of individuals receiving treatment for OUD will double between 2020 and 2023.³⁰ I understand that the Expert Report of Anna Lembke explains that an effective Abatement Plan could expand its reach in this way by 2024.

2. Treatment Services: MAT

43. A central element of the Abatement Plan is to increase patient access to MAT including buprenorphine, methadone and naltrexone, as part of the broader treatment program. Estimates of the cost of providing MAT need to recognize that not all individuals with OUD will avail themselves of such programs and that it will take some time to equip enough providers with the capacity to offer expanded services. Program costs are estimated under the assumption that the share of individuals in treatment that receive MAT will increase from one-third to two-thirds within four years. Available evidence indicates that some individuals will need to receive MAT for many years and that rates of relapse and return to MAT are high so resources will be required through at least 2034 to ensure that patients continue to have access to MAT.

44. The cost estimates anticipate that the number of individuals who receive MAT in the Communities will expand over the next four years from approximately seven percent of the

³⁰ I assume that in 2020, 20% of individuals with OUD receive treatment in the Cuyahoga and Summit communities, based on the available data on treatment prevalence for individuals with OUD. See for example, SAMHSA/HHS: An Update on the Opioid Crisis, March 14, 2018 at p. 2: "Only 20% with OUD received specialty addiction treatment."

OD population currently to approximately 27 percent. I understand that the Expert Report of Anna Lembke explains that an effective Abatement Plan could expand its reach in this way by 2024.

45. Estimates of the cost of providing MAT services under the plan are summarized in Appendix D Tables C.2 and S.2.

3. Recruiting Treatment Providers

46. The State of Ohio reports that “Ohio’s existing prescriber workforce is inadequate to meet the MAT need,” with only two percent of the physician workforce licensed to prescribe buprenorphine, and “most of these physicians are believed to be in the behavioral health field, which means that patients would have limited access to MAT through other physician practices like primary care . . .”³¹ A study of Ohio specialty treatment organizations found that half reported insufficient prescribing capacity.³² Lack of primary care physicians willing and equipped to manage patients receiving MAT is a major barrier to a successful “hub and spokes” model where specialty facilities manage patients through acute stages of their care and then hand patients off to primary care providers to manage the longer-term chronic phase of care.

47. In order to achieve the increased treatment levels described above, additional staff is needed to recruit primary care providers to obtain DEA licenses and become MAT providers. The Abatement Plan calls for funding of six full time nurse practitioners in Cuyahoga and Summit Counties to perform these services.

48. This estimate is presented in Appendix D, Tables C.3 and S.3.

4. Connecting Individuals to Services

49. As discussed above, it can be hard to coordinate treatment for opioid use disorder in Cuyahoga and Summit counties. Many of the hospital emergency departments lack the staff

³¹ Ohio Department of Mental Health and Addiction Services, Workforce development as Part of the 21st Century Cures Act.

³² Todd Molfenter, Carol Sherbeck, Mark Zehner, and Sandy Starr. Buprenorphine Prescribing Availability in a Sample of Ohio Specialty Treatment Organizations, J. Addictive Behav, Ther. Rehabil. 2015 4(2).

necessary to connect overdose patients to treatment. Treatment can be difficult to access outside of business hours, and there is a lack of resources to transport people to treatment.

50. The Abatement Plan includes staffing for a 24 hour a day / 7 days a week treatment connector hot line that could receive calls from individuals seeking treatment and from family members, emergency responders, or medical professionals trying to connect individuals to treatment services. It also includes resources to staff each major hospital emergency departments with social workers and recovery coaches who can connect individuals with substance use disorders to treatment. The Abatement Plan anticipates that new staff members will be required in Cuyahoga and Summit Counties to connect individuals to services. The plan also includes resources to pay for transportation to treatment sites for individuals who do not have a car.

51. The final component of “connections to services” is an expansion of web-based referral capacity. Research has shown that some individuals are more comfortable learning about treatment options and enrolling in treatment online rather than via a phone call or in person conversation.

52. Estimates of the costs of connecting individuals to services and treatment are summarized in Appendix D, Tables C.4 and S.4.

5. Special Population: Child Welfare

53. The United States Department of Health and Human Services (HHS) concluded that parental “[s]ubstance use, including opioid misuse, has downstream effects on children’s welfare and family stability, and these in turn can place a substantial burden on communities.”³³ The HHS report further found that counties with higher rates of drug overdose deaths and drug-related hospitalizations also have higher child welfare caseload rates and that substance use related cases are associated with more complex and severe child welfare cases.³⁴

54. The Abatement Plan provides the following resources for child welfare-involved families:

³³ ASPE Research Brief, US Department of Health and Human Services, “The Relationship between Substance Use Indicators and Child Welfare Caseloads,” Revised March 9, 2018, p. 7.

³⁴ ASPE Research Brief, US Department of Health and Human Services, “The Relationship between Substance Use Indicators and Child Welfare Caseloads,” Revised March 9, 2018, p. 1.

- Additional social workers to allow smaller caseloads for case workers managing complex cases involving substance abuse;
- Family advocates – peer coaches who have themselves recovered from substance use -- to assist parents in addressing their addictions;
- A trauma counselor in each community to provide services and advice to staff members at the Divisions of Children and Family Services who are managing cases in which parents or caregivers have died from drug overdoses.;
- Additional employees in Cuyahoga and Summit Counties to recruit foster families for placements of children affected by the opioid epidemic.
- Boarding costs for the placement of affected children in foster care.

55. Estimates of the abatement costs associated with child welfare services are summarized in Appendix D, Tables C.5 and S.5.

6. Special Populations: Pregnant Women

56. Prenatal exposure to drugs, and opioids in particular, have been an increasing issue in Ohio and in the Cuyahoga and Summit Communities. In 2016 alone, nearly 2,200 mothers in Ohio had an opioid drug abuse or dependence issue at the time of delivery.³⁵ Between 2013 and 2017 nearly 630 infants in Cuyahoga County and nearly 420 infants in Summit County were hospitalized due to Neonatal Abstinence Syndrome (NAS) resulting from exposure to opioids and other drugs in utero.³⁶

57. In addition to the treatment alternatives described above, the Abatement Plan provides resources for a maternal-infant home visiting program that provides specially trained nurses to regularly visit with new mothers and mothers-to-be with opioid use disorder to provide coaching on health and parenting, including substance use treatment.³⁷

³⁵ 2017 Ohio Neonatal Abstinence Syndrome Report, available at <https://odh.ohio.gov/wps/portal/gov/odh/know-our-programs/violence-injury-prevention-program/media/nas-datatable-2017>.

³⁶ 2017 Ohio Neonatal Abstinence Syndrome County Report, available at https://odh.ohio.gov/wps/portal/gov/odh/know-our-programs/violence-injury-prevention-program/resources/NAS_Hospital_Reporting_in_Ohio.

³⁷ The federal program is described at: https://mchb.hrsa.gov/sites/default/files/mchb/MaternalChildHealthInitiatives/HomeVisiting/pdf/program_brief.pdf

58. Estimates of these costs are summarized in Appendix D, Tables C.6 and S.6.

7. Special Population: Jails

59. It is widely recognized that a substantial share of jail inmates have substance misuse problems.³⁸ The high OUD rates create challenges for the jail system: inmates going through detoxification require medical attention and additional staff care. However, currently both Cuyahoga and Summit County jails typically house such inmates within the general population. As a result, at times inmates need to be transported and housed in a hospital during this process at significant expense to the counties. And without sufficient resources to be able to start substance abuse treatment while inmates are in jail or to connect them effectively to treatment options upon release, the jails observe individuals committing opioid-related offenses soon after release and cycling back into jail.

60. The Abatement Plan would approximately double substance abuse treatments at Cuyahoga County's Bedford Heights and Euclid facilities and would add a detoxification unit at Cuyahoga County jail. Services also will be expanded in Summit County. Plans call for hiring additional social workers in Cuyahoga and Summit Counties to connect newly released inmates with OUD with treatment and transition services. Transitional housing also would be made available to a portion of inmates with OUD being released from prison.

61. Estimates of these abatement costs for the jails are summarized in Appendix D, Tables C.7 and S.7.

D. Overview of Harm Reduction Services Under the Abatement Plan

1. Naloxone

62. Naloxone is an opioid antagonist that has proven to be highly successful in reducing mortality when delivered to individuals experiencing an opioid-related overdose.³⁹ Naloxone is often administered by first responders, such as individuals from the divisions of Emergency Medical Services, Fire and Police. However, first responders may not arrive in time

³⁸ CUYAH_003505168 ("The CCCC currently provides housing and services for 26,000 inmates annually, the majority are inmates under a pre-trial status. Of this population, approximately 75% have a substance use disorder.")

³⁹ See National Institute on Drug Abuse, "Opioid Reversal with Naloxone (Narcan, Evzio)," revised April 2018, available at <https://www.drugabuse.gov/related-topics/opioid-overdose-reversal-naloxone-narcan-evzio>.

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to administer naloxone and prevent a death. Indeed, the communities have already begun distributing naloxone kits to individuals through Project DAWN programs. I understand that Dr. Theodore Parran explains that fatalities from opioid-related overdoses would be reduced if naloxone kits were made more widely available to individuals with OUD, to their friends and family members, and if kits continue to be available to all first responders in the communities. He recommends that, on a community-wide basis, 3 to 9 doses (1.5 to 4.5 naloxone kits) be made available for each opioid-dependent individual, including individuals in treatment. Kits would be made available to the individuals, as well as their relatives and close friends.

63. Recognizing that not all individuals with OUD and their family and friends would take advantage of the plan, the Abatement Plan anticipates that two naloxone kits would be distributed in the community per year for each individual with OUD. These kits have a shelf life of two years and thus will need to be replaced regularly, even if not used. The Abatement Plan also provides for two public health employees in Cuyahoga County and one in Summit County to coordinate the logistics of the distribution program.

64. The Abatement Plan also continues to provide for sufficient naloxone availability for all first responders in the communities. In particular, based on 2017 purchasing data for the City of Cleveland the plan assumes that approximately 12,000 doses of naloxone will be purchased each year in Cuyahoga County and approximately 5,200 doses of naloxone will be purchased in Summit County, both to replace naloxone doses that have been used and those that have expired.

65. Appendix D Tables I, C.8 and S.8 reports estimates of Naloxone-related costs under the Abatement Plan.

2. Syringe Exchange Programs

66. Both communities operate needle exchange programs where intravenous drug users can exchange used needles for clean needles. Such programs have been shown to reduce infections with HIV and hepatitis C. In addition, these programs can counsel drug users on treatment options, encourage users to be tested for HIV and hepatitis C, and distribute fentanyl strips. The Abatement Plan would increase the number of syringe exchange locations in each community and expand the hours that they are open. Specifically, it would increase the needles exchanged in Cuyahoga County by 50 percent and the needles exchanged in Summit County by two-thirds.

67. Appendix D, Tables C.9 and S.9 report estimates of costs of the Syringe Exchange Program.

3. HIV/Hepatitis C Interventions

68. Intravenous use of heroin and other opioids is associated with an elevated risk of infection with HIV and hepatitis C.⁴⁰ Treating those infected with HIV and hepatitis C can reduce the harm to the individuals and reduce the spread of these diseases to others. The abatement plan includes resources for individuals who inject opioids to receive screening for HIV and hepatitis C, as well as resources to treat those whose HIV and hepatitis C was obtained from injection of opioids.

69. Estimates of these costs of HIV/Hepatitis C interventions are reported in Appendix D, Tables C.10 and S.10.

4. Social Support Housing

70. Research shows that unstable housing is associated with a higher risk of overdose death among those with substance use disorders.⁴¹ The Abatement Plan proposes to provide two kinds of housing resources. The first is transitional housing for individuals with a history of opioid misuse being released from jail or prison.⁴² The second is permanent supportive housing for homeless individuals with a history of opioid misuse.

71. Estimates of these social support housing costs under the Abatement Plan are reported in Appendix D, Tables C.11 and S.11.

E. Overview of Prevention Services Under the Abatement Plan

72. The primary prevention portion of the Abatement Plan aims to prevent individuals from becoming opioid users and misusers. It would allocate resources for a community-wide media campaign, for school-based prevention programs, for medical provider education and outreach, for drug disposal programs, and for law enforcement interventions. Each of these is briefly addressed in turn.

⁴⁰ <https://www.drugabuse.gov/publications/research-reports/heroin/why-are-heroin-users-special-risk-contracting-hiv-aids-hepatitis-b-c>

⁴¹ For example, a Massachusetts Department of Health study found that the opioid-related death rate for individuals experiencing homelessness was 16 to 30 times greater than the rest of the population. (<https://www.mass.gov/files/documents/2017/08/31/data-brief-chapter-55-aug-2017.pdf>)

⁴² This component is covered in the Special Populations: Jails cost category.

1. Media Campaigns

73. Media campaigns can play several important roles in combatting the opioid epidemic. First, they can educate individuals about the risks associated with prescription opioids so that they can make informed decisions about approaches to pain management. Second, they can educate individuals about the safe use of opioids, such as the benefits of keeping the duration of prescription opioid use as short as possible and of disposing of unused pills. Third, they can make individuals aware of specific resources available in their community such as drug disposal programs. Fourth, media campaigns can reduce the stigma associated with seeking treatment and also provide information to individuals about how to access treatment. The Abatement Plan provides resources to each community in line with prior successful public health media campaign's such as the FDA's "The Real Cost" media campaign to prevent youth from using tobacco.⁴³

74. The cost estimates are provided in Appendix D Tables C.12 and S.12.

2. School-based Prevention Programs

75. The proposed school-based prevention program combines an evidence-based universal prevention effort with intensive referral and case-management effort for students showing early signs of being at risk for substance abuse.

76. Evidence-based school-wide programs such as LifeSkills Training (LST) and Project Towards No Drug Abuse (TND) have been shown to reduce adolescent substance use in multiple randomized trials demonstrating long-term effects.⁴⁴ In the abatement plan, I assume that programming is delivered to every student from sixth grade through twelfth grade – approximately 106,000 students in the Cuyahoga community and approximately 46,000 in the Summit community. Schools can also play an important role in identifying students who are showing early signs of being at risk for substance abuse and connecting those students to services. School districts such as New Haven have set up and staffed programs in which

⁴³ MacMonegle, Anna J., James Nonnemaker, Jennifer C. Duke, Matthew C. Farrelly, Xiaoquan Zhao, Janine C. Delahanty, Alexandria A. Smith, Pamela Rao and Jane A. Allen. "Cost-Effectiveness Analysis of The Real Cost Campaign's Effect on Smoking Prevention." *American Journal of Preventive Medicine* 55 no. 3 (2018): 319-325.

⁴⁴ Kris Glunt, "School-based Substance Abuse Prevention," EPISCenter, available at <http://www.episcenter.psu.edu/sites/default/files/Presentations/SSC%20Presentation.pdf>, pp. 8, 17-19, 26, 34.

educators within each school meet regularly to review the list of students who need services and then follow up to make sure the connections to services actually occur.⁴⁵ The abatement plan provides resources so that every high school and middle school in the Communities has a sufficient number of social workers to coordinate the school's efforts to connect at risk youth to services.

77. The cost estimates are provided in Appendix D, Tables C.13 and S.13.

3. Medical Provider Education and Outreach

78. Studies have found that medical system quality improvement efforts that educate providers about appropriate prescribing practices can significantly reduce opioid overprescribing. For example, a recent study of a coordinated effort by a medical system in Maryland found that a combination of provider education and accountability, enhanced oversight, tools to right-size postoperative discharge prescriptions, and reduction of default amount on standard opioid prescription orders resulted in a 58 percent decline in morphine milligram equivalents per clinical encounter.⁴⁶ The Abatement Plan would fund individuals to work with provider groups and medical systems to educate providers, address overprescribing, and spread best prescribing practices.

79. Estimates of the costs of the medical provider education and outreach programs are provided in Appendix D, Tables C.14 and S.14.

4. Drug Disposal Programs

80. Both communities have drug disposal programs including drug drop box sites and "take back your meds" events. The abatement plan provides resources to double the number of drop boxes installed as well as the number of events.

81. Estimates of these costs are provided in Appendix D, Tables C.15 and S.15.

5. Law Enforcement

82. In both Cleveland and Akron, police officials report that the opioid epidemic has required their departments to redeploy resources from other policing activities. In Cleveland, an

⁴⁵ https://www.newhavenct.gov/depts/youth_services/stat.htm.

⁴⁶ Barry R. Meisenberg, MD; Jennifer Grover, PA; Colson Campbell, BS; Daniel Korpon, MS. Assessment of Opioid Prescribing Practices Before and After Implementation of a Health System Intervention to Reduce Opioid Overprescribing. JAMA Open Network, September 28, 2018.

entire unit that was previously dedicated to disrupting the activities of drug dealers, today is instead assigned to investigate drug overdose deaths.⁴⁷ In Akron, a two-person team investigates overdose deaths; the department notes that each requires an investigation with a similar level of detail as a homicide.⁴⁸ In Cleveland, police officials estimated that it would require an additional 20-25 officers to return to the level of service that was provided before the opioid epidemic and in Akron, at least two additional officers are needed to investigate overdose deaths.⁴⁹ The Abatement Plan provides additional staffing to community law enforcement agencies to investigate overdose deaths.

83. Additionally, both the city and county prosecutor's offices in the Communities have had to divert resources from prosecuting other crimes to prosecuting opioid related offenses. The Abatement Plan provides additional prosecutors to the community who can focus on prosecuting opioid-related crime.

84. Estimates of law enforcement costs are provided in Appendix D, Tables C.16 and S.16.

F. System Coordination

85. The Abatement Plan would dedicate a large amount of resources toward preventing and treating opioid addiction and avoiding and reducing the harms associated with improper opioid use. Achieving maximum impact will require effective coordination of the different pieces of the plan and of the different community partners responsible for implementing the different pieces. It will also require the ability to track progress and unmet needs using high-frequency data so as to reallocate resources to their highest value use as the nature of the epidemic evolves. Toward these ends, the Abatement Plan includes resources to system coordination.

1. Tracking Abatement Progress

86. In the Cuyahoga and Summit communities, the County Medical Examiners perform two important functions that are critical to the communities' ability to track and quickly respond to changing patterns of opioid use. First, they perform autopsies that can determine

⁴⁷ Deposition of Gary Gingell, November 20, 2018, pp. 237, 175-176.

⁴⁸ See AKRON_001121744 and AKRON_001121745

⁴⁹ See Deposition of Gary Gingell, November 20, 2018, pp. 243-244; AKRON_001121745.

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what substances were responsible for overdose deaths. Second, they test drugs seized by police to determine what the substances are. The rise in overdose deaths and in the need for testing of drugs has resulted in an unsustainable work load for the medical examiner offices. The Abatement Plan would add staff to the Cuyahoga medical examiner's office and the Summit medical examiner's office.

87. Estimated costs of tracking the abatement progress are presented in Appendix D, Tables C.17 and S.17.

2. Court System Resources

88. The court systems in each community perform important roles in connecting individuals to treatment services. However, there are often several-week delays between when referrals to services are made and when assessments occur and then further delays before treatment can begin.⁵⁰ The Abatement Plan provides each community's court system with additional staff members who would 1) keep judges up to date on treatment options in the community; 2) track the docket of individuals who have been referred to drug treatment services to measure how quickly connections to services are being made; 3) intervene with service providers to reduce treatment delays; and 4) represent the court system in the abatement initiative systems re-engineering processes.

89. Estimated costs of additional court system resources are presented in Appendix D, Tables C.18 and S.18.

3. Data Informed Systems Re-Engineering and Management

90. The Abatement Plan would provide each community with funding to set up a team to coordinate the overall effort and to work with the multitude of government agencies, medical institutions, and service providers to troubleshoot problems, develop continuous improvement efforts, and identify opportunities to re-engineer how individuals are connected to services to reduce the number of people who fall through the cracks. The team would be responsible for establishing high frequency (weekly and monthly) metrics for tracking the progress and efficacy of the Abatement Plan and for convening relevant stakeholders to

⁵⁰ Summit County, Sequential Intercept Mapping and Action Planning for Opioid Epidemic Response, March 20, 2019 (SUMMIT_000349556), at p. 15; Comment by D. Skoda at Roundtable Meeting with Summit County Community Members, July 11, 2018.

collaboratively review the metrics and determine how to take action so as to maximize the number of residents who receive needed treatment, minimize the harms associated with opioid use, and reduce the flow of new individuals who use or become addicted to opioids. The abatement Plan envisions a five-person team in each community made up of an executive director, two program managers, one data analyst, and one staff assistant.

91. Estimates of these costs are summarized in Appendix D, Tables C.19 and S.19.

VII. ESTIMATED COST OF ABATEMENT PLAN

92. Tables 1 and 2 summarize the costs of the Abatement Plan for the programs evaluated to date for Cuyahoga and Summit, respectively. These costs include both the costs of continuing current efforts to abate the opioid epidemic and the additional costs associated with the expansion in services envisioned in the Plan.

93. It is anticipated that it will take four years to phase in the plan, with costs rising in each year from 2020 through 2023. To illustrate the annual cost of the plan once fully implemented, the first column shows the annual cost in year 5 of the plan (2024). Annual costs for the elements of the Abatement Plan evaluated to date are estimated to be \$312 million in Cuyahoga and \$137 million in Summit in 2024.⁵¹

94. The base case reflects the Experts' view that 2024 level of treatment will be needed for at least another 10 years after that date. I understand that the Expert Report of Anna Lembke explains that the current and future stock of people who have experienced OUD will lead to recurring treatment needs in the future both because some individuals will need to receive treatment for many years and because others will relapse and require renewed treatment. Thus,

⁵¹ Annual costs for each year from 2020 through 2034 are provided in the accompanying detailed tables.

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any decline in treatment needs from a decline in new OUD cases will be offset by greater needs associated with the growing stock of people with continuing treatment needs.⁵²

Table 1
Summary of Abatement Costs, Cuyahoga County

\$ in millions	Annual Cost: Year 5 (2024)	15-Year Estimate: 2020-2034			Report Section	App D Table	
		Low	Base	High			
<u>TREATMENT</u>							
[1]	Treatment (Excl. MAT)	\$184.2	\$2,595.0	\$3,003.4	\$3,411.7	VI.C.1	Table C.1
[2]	Medication-Assisted Treatment (MAT)	\$40.3	\$513.6	\$594.0	\$674.5	VI.C.2	Table C.2
[3]	Recruiting PCPs to Provide MAT	\$0.5	\$9.0	\$9.0	\$9.0	VI.C.3	Table C.3
[4]	Connecting Individuals to Services	\$5.8	\$92.0	\$94.5	\$97.1	VI.C.4	Table C.4
[5]	Special Populations: Child Welfare	\$17.6	\$288.6	\$288.6	\$288.6	VI.C.5	Table C.5
[6]	Special Populations: Pregnant Women	\$1.7	\$29.2	\$29.2	\$29.2	VI.C.6	Table C.6
[7]	Special Populations: Jails	\$13.7	\$222.0	\$222.0	\$222.0	VI.C.7	Table C.7
<u>HARM REDUCTION</u>							
[8]	Naloxone	\$5.0	\$78.5	\$85.2	\$91.9	VI.D.1	Table C.8
[9]	Syringe Exchange Programs	\$0.7	\$10.9	\$11.3	\$11.8	VI.D.2	Table C.9
[10]	HIV/Hep C Interventions	\$13.8	\$205.9	\$205.9	\$205.9	VI.D.3	Table C.10
[11]	Social Support Housing	\$4.8	\$77.0	\$77.0	\$77.0	VI.D.4	Table C.11
<u>PREVENTION</u>							
[12]	Media Campaign	\$1.2	\$18.5	\$18.5	\$18.5	VI.E.1	Table C.12
[13]	School-Based Prevention	\$16.1	\$264.0	\$264.0	\$264.0	VI.E.2	Table C.13
[14]	Medical Provider Education	\$0.4	\$6.3	\$6.3	\$6.3	VI.E.3	Table C.14
[15]	Drug Disposal Programs	\$0.4	\$6.1	\$6.1	\$6.1	VI.E.4	Table C.15
[16]	Law Enforcement Interventions	\$4.5	\$74.5	\$74.5	\$74.5	VI.E.5	Table C.16
<u>SYSTEM COORDINATION</u>							
[17]	Tracking Abatement Progress	\$0.4	\$6.7	\$6.7	\$6.7	VI.F.1	Table C.17
[18]	Court System Resources	\$0.3	\$5.0	\$5.0	\$5.0	VI.F.2	Table C.18
[19]	Data-Informed Systems Re-Engineering & Mgmt	\$0.8	\$13.9	\$13.9	\$13.9	VI.F.3	Table C.19
ABATEMENT COST, TOTAL		\$312.2	\$4,516.6	\$5,015.2	\$5,513.7		

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Table 2
Summary of Abatement Costs, Summit County

Summary of Abatement Costs, Summit County							
\$ in millions	Annual Cost:	15-Year Estimate: 2020-2034			Report Section	App D Table	
	Year 5 (2024)	Low	Base	High			
<u>TREATMENT</u>							
[1]	Treatment (Excl. MAT)	\$80.5	\$1,136.1	\$1,313.1	\$1,490.1	VI.C.1	Table S.1
[2]	Medication-Assisted Treatment (MAT)	\$17.5	\$222.7	\$257.5	\$292.4	VI.C.2	Table S.2
[3]	Recruiting PCPs to Provide MAT	\$0.3	\$4.5	\$4.5	\$4.5	VI.C.3	Table S.3
[4]	Connecting Individuals to Services	\$2.9	\$45.8	\$47.0	\$48.2	VI.C.4	Table S.4
[5]	Special Populations: Child Welfare	\$13.2	\$216.8	\$216.8	\$216.8	VI.C.5	Table S.5
[6]	Special Populations: Pregnant Women	\$0.9	\$15.1	\$15.1	\$15.1	VI.C.6	Table S.6
[7]	Special Populations: Jails	\$5.2	\$84.0	\$84.0	\$84.0	VI.C.7	Table S.7
<u>HARM REDUCTION</u>							
[8]	Naloxone	\$2.3	\$36.2	\$39.1	\$42.0	VI.D.1	Table S.8
[9]	Syringe Exchange Programs	\$0.5	\$7.1	\$7.4	\$7.7	VI.D.2	Table S.9
[10]	HIV/Hep C Interventions	\$2.7	\$40.2	\$40.2	\$40.2	VI.D.3	Table S.10
[11]	Social Support Housing	\$1.5	\$24.0	\$24.0	\$24.0	VI.D.4	Table S.11
<u>PREVENTION</u>							
[12]	Media Campaign	\$0.5	\$8.1	\$8.1	\$8.1	VI.E.1	Table S.12
[13]	School-Based Prevention	\$7.0	\$114.0	\$114.0	\$114.0	VI.E.2	Table S.13
[14]	Medical Provider Education	\$0.1	\$1.8	\$1.8	\$1.8	VI.E.3	Table S.14
[15]	Drug Disposal Programs	\$0.2	\$3.7	\$3.7	\$3.7	VI.E.4	Table S.15
[16]	Law Enforcement Interventions	\$0.9	\$14.6	\$14.6	\$14.6	VI.E.5	Table S.16
<u>SYSTEM COORDINATION</u>							
[17]	Tracking Abatement Progress	\$0.2	\$3.2	\$3.2	\$3.2	VI.F.1	Table S.17
[18]	Court System Resources	\$0.3	\$5.0	\$5.0	\$5.0	VI.F.2	Table S.18
[19]	Data-Informed Systems Re-Engineering & Mgmt	\$0.8	\$13.9	\$13.9	\$13.9	VI.F.3	Table S.19
ABATEMENT COST, TOTAL		\$137.4	\$1,996.9	\$2,213.2	\$2,429.4		

95. There is, however, uncertainty about the extent of future treatment needs. For example, the Abatement Plan assumes that 1.4 percent of the adult population in each community has opioid use disorder, based on an estimate reported by Pitt et al. Pitt et al. adjust NSDUH estimate of the OUD population upward by roughly 70 percent to correct for underreporting and for populations like the homeless and incarcerated who are not included in the NSDUH sampling frame.⁵³ This adjustment may be conservative based on a 2018

⁵² The resource needs for some components of the Abatement Plan are assumed to decline over time. For example, as more individuals receive MAT, the plan envisions a decline in overdoses and reduced need to replace first responder supplies of naloxone.

⁵³ Pitt, Allison L., Keith Humphreys and Margaret L. Brandeau. "Modeling Health Benefits and Harms of Public Policy Responses to the US Opioid Epidemic." *AJPH Open Themed Research* Vol. 108 no. 10 (Oct 2018): 1394-1400, at Supplement pp. S3-S4.

Massachusetts study which estimates that the number of people with OUD could be more than four times the NSDUH estimate.⁵⁴ Moreover, it eventually may be possible to recruit more than 40 percent of the OUD population into treatment. For both of these reasons, treatment costs could be higher than in the base case. Alternatively, it is possible that changes in prescribing practices and other prevention efforts will reduce the flow of new OUD cases faster than currently anticipated and that treatment costs will therefore be lower than in the base case.

96. To illustrate the sensitivity of the base case estimates to alternative assumptions about future treatment needs, Tables 1 and 2 present “high” and “low” estimates in addition to the base case.⁵⁵ The high estimate assumes that treatment needs increase over ten years to 1.33 times the 2024 level. The low estimate assumes treatment needs decline over ten years to two-thirds of the 2024 level. In Cuyahoga, the 15-year costs for the elements of the Abatement Plan evaluated to date range from \$4.5 billion to \$5.5 billion. In Summit, the 15-year costs range from \$2.0 billion to \$2.4 billion.

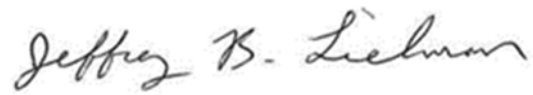
97. The Abatement Plan described in this report reflects the information available to me at the time of its writing and my best judgment about the needs in the two communities. When it becomes time to implement the actual Plan, it will be important to update the Plan based upon the latest information and conditions on the ground in Cuyahoga and Summit and to have a more intensive process of engaging community members and local experts so as to ensure the most effective possible implementation of the Abatement Plan for the Cuyahoga and Summit Communities.

⁵⁴ Barocas, et al, “Estimated Prevalence of Opioid Use Disorder in Massachusetts, 2011-2015: A Capture-Recapture Analysis.” *American Journal of Public Health*, 2018, 108:12, 1675-1681.

⁵⁵ In addition to the treatment variations described here, low and high case estimates are also presented in Tables C.8 and S.8 (naloxone) and C.9 and S.9 (syringe exchange programs).

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April 3, 2019

A handwritten signature in cursive script that reads "Jeffrey B. Liebman". The signature is written in dark ink and is positioned above a horizontal line.

Jeffrey B. Liebman

March 2019

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 Director, Taubman Center for State and Local Government, 2015-present.
 Director, Rappaport Institute for Greater Boston, 2015-present.
 Founder and Director, Harvard Kennedy School Government Performance Lab, 2011-present.
 Research Associate, National Bureau of Economic Research, 2005-present.
 Co-organizer, NBER Working Group on Social Security.
 Associate Director, NBER Retirement Research Center and NBER Disability Research Center, 2011-2015.

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Acting Deputy Director, Office of Management and Budget, 2010.
 Executive Associate Director and Chief Economist, Office of Management and Budget, 2009.
 Special Assistant to the President for Economic Policy, White House National Economic Council, 1998-1999.
 Assistant Professor of Public Policy, Kennedy School of Government, Harvard University, 1996-2001.
 Associate Professor of Public Policy, Kennedy School of Government, Harvard University, 2001-2005.
 Professor of Public Policy, Kennedy School of Government, Harvard University, 2005-2006.
 Faculty Research Fellow, National Bureau of Economic Research, 1996-2005.
 Harvard Kennedy School Area Chair for Social Policy, 2005-2007.
 Director, Harvard University Multidisciplinary Program in Inequality and Social Policy, 2005-2007.

Education:

Ph.D., Economics, 1996	Harvard University
B.A. <i>magna cum laude</i> , distinction in Economics and Political Science, 1989	Yale University

Honors and Fellowships:

Elected to National Academy of Social Insurance, 2002.
 NBER Center for Aging, Demography Research Fellow, 2001-2002.
 Alfred P. Sloan Foundation Doctoral Dissertation Fellowship, 1995-1996.
 Tinker Foundation Fellowship for research in Mexico, summer 1992.
 National Science Foundation Graduate Fellowship, 1991-1994.
 Yale University, Ronald Meltzer Economics Award for the outstanding senior essay in major, 1989.

Research Grants:

Bloomberg Philanthropies grant to fund Government Performance Lab work on results-driven contracting, 2015-2021.
 John and Laura Arnold Foundation grants to fund Government Performance Lab 2013-2020.

Rockefeller Foundation grant to expand Social Impact Bond Technical Assistance Lab, 2012-2015.
 Dunham Fund grant to expand Social Impact Bond Technical Assistance Lab, 2013-2015.
 Smith Richardson Foundation grant for "Building an Evidence Base for Disability Insurance Reform" (with Jack Smalligan), 2012-2013.
 Rockefeller Foundation grant to establish a "Social Impact Bond Technical Assistance Lab," 2011-2013.
 National Institutes of Health (NIA), "Building Integrated Models of Retirement: Three Approaches," 2007-2012.
 NBER-SSA Retirement Research Center grant for "The Taxation of Social Security Benefits as an Approach to Means Testing," 2007-2008.
 NBER-SSA Retirement Research Center grant for "The Perception of Social Security Incentives for Labor Supply and Retirement" (with Erzo Luttmer), 2007-2008.
 NBER-SSA Retirement Research Center grant for "Labor Supply Responses to the Social Security Tax-Benefit Link" (with Erzo Luttmer), 2006-2007.
 NBER-SSA Retirement Research Center grant for "How Should Changes in Population Health Affect Retirement Ages?" (with David Cutler), 2006-2007.
 NBER-SSA Retirement Research Center grant for "Could Social Security Eliminate Poverty Among the Elderly?", 2005-2006.
 NBER-SSA Retirement Research Center grant for "Earnings Responses to Raising the Social Security Taxable Maximum?" (with Emmanuel Saez), 2004-2005.
 NBER-SSA Retirement Research Center grant for "How Fast Should the Social Security Retirement Age Rise?" (with David Cutler), 2003-2004.
 National Institutes of Health (NIA) First Award for "Protecting the Poor While Reforming Social Security," 1999-2004.
 Russell Sage Foundation Grant for "Reforming Tax and Transfer Programs in Order to Assist Low-skilled Workers," 1997-2000.
 National Institute of Child Health and Human Development grant for "Effects of High-Poverty Neighborhoods on Youth" (with Lawrence Katz and Jeffrey Kling), 2001-2004.
 Russell Sage Foundation grant for "Effects of High-Poverty Neighborhoods on Youth" (with Lawrence Katz and Jeffrey Kling), 2000-2006.
 Smith Richardson Foundation grant for "Effects of High-Poverty Neighborhoods on Youth" (with Lawrence Katz and Jeffrey Kling), 2000-2003.
 William T. Grant Foundation grant for "Effects of High-Poverty Neighborhoods on Youth" (with Lawrence Katz and Jeffrey Kling), 2001-2004.
 MacArthur Foundation grant for "Moving to Opportunity and Family Well-being" (with Lawrence Katz, Jeffrey Kling, Jeanne Brooks-Gunn, and Greg Duncan), 2001-2002.
 Robert Wood Johnson Foundation grant for "Moving to Opportunity and Family Well-being" (with Lawrence Katz, Jeffrey Kling, Jeanne Brooks-Gunn, and Greg Duncan), 2001-2002.
 U.S. Department of Housing and Urban Development grant for "Expanding Moving to Opportunity Research" (with Lawrence Katz and Jeffrey Kling), 2000-2006.
 US Department of Housing and Urban Development grant, 1995-2000, for "Moving to Opportunity in Boston" (with Lawrence Katz and Jeffrey Kling).
 NBER-NIA Center for Aging and Health Research grant for "Health Outcomes in MTO" (with Lawrence Katz and Jeffrey Kling), 1997-1998.

Journal Articles and Book Chapters:

Research on Housing Policy and Neighborhood Effects

1. "Moving to Opportunity in Boston: Early Outcomes of a Housing Mobility Program" (with Lawrence Katz and Jeffrey Kling), *Quarterly Journal of Economics*, May 2001.

2. "Boston Site Findings: The Early Impacts of Moving to Opportunity" (with Lawrence Katz and Jeffrey Kling), in *Choosing a Better Life? Evaluating the Moving to Opportunity Social Experiment*, edited by John M. Goering and Judith D. Feins (Washington: Urban Institute Press), 2003.
3. "Bullets Don't Got No Name: Consequences of Fear in the Ghetto" (with Lawrence Katz and Jeffrey Kling), in *Discovering Successful Pathways in Children's Development: New Methods in the Study of Childhood and Family Life*, edited by Thomas S. Weisner (Chicago: University of Chicago Press), 2004.
4. "Experimental Analysis of Neighborhood Effects" (with Jeffrey Kling and Lawrence Katz), *Econometrica*, January 2007.
5. "What Can We Learn About Neighborhood Effects from the Moving to Opportunity Experiment?" (with Jens Ludwig, Jeffrey Kling, Greg Duncan, Larry Katz, Ronald Kessler, and Lisa Sanbonmatsu), *American Journal of Sociology*, 114, July 2008.

Research on Executive Compensation

5. "Are CEOs Really Paid Like Bureaucrats?" (with Brian Hall), *Quarterly Journal of Economics*, August 1998.
6. "Taxation and Executive Compensation" (with Brian Hall), *Tax Policy and the Economy*, 14, 2000.

Research on the Earned Income Tax Credit

7. "Labor Supply Response to the Earned Income Tax Credit" (with Nada Eissa), *Quarterly Journal of Economics*, May 1996. Reprinted in Alan Auerbach, editor, *Public Finance*, Worth Series in Outstanding Contributions, 2000.
8. "The Impact of the Earned Income Tax Credit on Incentives and Income Distribution," *Tax Policy and the Economy*, 12, 1998.
9. "Who are the Ineligible Earned Income Tax Credit Recipients?" *National Tax Journal*, December 2000.
10. "The Optimal Design of the Earned Income Tax Credit," in *Making Work Pay: The Earned Income Tax Credit and Its Impact on American Families*, edited by Bruce D. Meyer and Douglas Holtz-Eakin (New York: Russell Sage Foundation Press), 2002.
11. "The EITC Abroad: Implications of the British WFTC for Pay-as-you-earn Administration of the EITC," (with Janet Holtzblatt), *Proceedings of the National Tax Association*, 1999.
12. "Would People Behave Differently If They Better Understood Social Security? Evidence from a Field Experiment" (with Erzo Luttmer), *American Economic Journal: Economic Policy*, 7(1), 2015.

Research on Social Security and Social Security Reform

13. "The Perception of Social Security Incentives for Labor Supply and Retirement: The Median Voter Knows More than You'd Think" (with Erzo Luttmer), *Tax Policy and the Economy*, 26, 2012.
14. "Labor Supply Responses to Marginal Social Security Benefits: Evidence from Discontinuities" (with Erzo Luttmer and David Seif), *Journal of Public Economics*, 93, December 2009.
15. "Redistribution in the Current U.S. Social Security System," in *The Distributional Aspects of Social Security and Social Security Reform*, edited by Martin Feldstein and Jeffrey B. Liebman (Chicago: University of Chicago Press), 2002.
16. "The Distributional Effects of an Investment-based Social Security System" (with Martin Feldstein), in *The Distributional Aspects of Social Security and Social Security Reform*, edited by Martin Feldstein and Jeffrey B. Liebman (Chicago: University of Chicago Press), 2002.
17. "Social Security" (with Martin Feldstein), in *Handbook of Public Economics*, edited by Alan J. Auerbach and Martin Feldstein (Amsterdam: Elsevier), volume 4, 2002.

Research on Tax and Budget Policy

18. "Independent Taxation, Horizontal Equity, and Return-Free Filing" (With Daniel Ramsey), *Tax Policy and the Economy* 33, forthcoming 2019.
19. "Do Expiring Budgets Lead to Wasteful Year-End Spending? Evidence from Federal Procurement" (with Neale Mahoney), *American Economic Review*, 107(11), 2017.
20. "Social Security and National Saving in an Era of Budget Surpluses" (with Douglas Elmendorf), *Brookings Papers on Economic Activity*, 2, 2000.
21. "The Middle Class Parent Penalty: Child Benefits in the U.S. Tax Code" (with David Ellwood), *Tax Policy and the Economy*, 15, 2001.
22. "Fiscal Policy and Social Security Policy During the 1990s" (with Douglas Elmendorf and David Wilcox), in *American Economic Policy in the 1990s*, edited by Jeffrey Frankel and Peter Orszag (Cambridge: MIT Press), 2002.
23. "Saving Incentives for Low- and Middle-income Families: Evidence from a Field Experiment with H&R Block (with Esther Duflo, William Gale, Peter Orszag, and Emmanuel Saez), *Quarterly Journal of Economics*, November 2006.
24. "Simple Humans, Complex Insurance, Subtle Subsidies" (with Richard Zeckhauser), in *Using Taxes to Reform Health Insurance: Pitfalls and Promises*, edited by Henry Aaron and Leonard Burman (Washington, Brookings Institution), 2008.
25. "The Deterioration in the U.S. Fiscal Outlook, 2001–2010," *Tax Policy and the Economy*, 27, 2013.
26. "The Decline, Rebound, and Further Rise in SNAP Enrollment: Disentangling Business Cycle Fluctuations and Policy Changes" (with Peter Ganong), *American Economic Journal: Economic Policy*, 10:4, 2018.

Working Papers:

27. "How Fast Should the Social Security Eligibility Age Rise?" (with David Cutler, Seamus Smyth, and Mark Shepard).
28. "Earnings Responses to Increases in Payroll Taxes" (with Emmanuel Saez).
29. "Schmeduling" (with Richard Zeckhauser).

Books Edited:

Distributional Aspects of Social Security and Social Security Reform (with Martin Feldstein), (Chicago: University of Chicago Press), 2002.

Social Security Policy in a Changing Environment (with David Wise and Jeffrey Brown), (Chicago: University of Chicago Press), 2009.

Other Writings:

"How Cities Can Improve Their Procurement of Goods and Services" (With Hanna Azemati), in *Retooling Metropolis*, Manhattan Institute, 2016.

Social Impact Bonds: A Guide for State and Local Governments (with Alina Sellman), Harvard SIB Lab, June 2013.

Building on Recent Advances in Evidence-Based Policymaking, Brookings Hamilton Project and America Achieves, April 2013.

"An Evidence-Based Path to Disability Insurance Reform" (with Jack Smalligan) in *15 Ways to Rethink the Federal Budget*, Brookings Hamilton Project, February 2013.

"Social Impact Bonds: Lessons Learned So Far" (with SIB Lab team) in *Community Development Investment Review*, Federal Reserve Bank of San Francisco, February 2013.

"The Baby Boom Bump" (with Kenneth Baer), *New York Times*, December 6, 2012.

"The End of Health Insurance Companies" (with Ezekiel Emanuel), *New York Times Opinionator*, January 30, 2012.

"Cut Medicare, Help Patients" (with Ezekiel Emanuel), *New York Times*, August 22, 2011.

Social Impact Bonds: A Promising New Financing Model to Accelerate Social Innovation and Improve Government Performance, Center for American Progress, February 2011.

"Social Security Meets Race," *Science*, September 23, 2005, p. 1965.

"Reforming Social Security: Not All Privatization Schemes Are Created Equal." *Harvard Magazine*, March-April, 2005.

Moving to Opportunity: Interim Impacts Evaluation (with Larry Orr, Judith Feins, Robin Jacob, Erik Beecroft, Lisa

Sanbonmatsu, Jeffrey Kling, and Lawrence Katz). Washington D.C.: U.S. Department of Housing and Urban Development, 2003.

The Role of Annuities in a Reformed U.S. Social Security System. December 2002. AARP Public Policy Institute report 2002-17.

“Is Social Security Unfair to the Poor?” Op-ed, *Washington Post*, July 29, 2001.

“Personal Accounts and Social Security,” Letter to the Editor, *Washington Post*, July 9, 2001.

“The Earned Income Tax Credit.” Testimony provided to the Committee on Finance, United States Senate, Washington, D.C., March 7, 2001.

“The EITC Compliance Problem,” *Poverty Research News*, Summer 1998, Joint Center for Poverty Research.

“Tax Credit Combines Best of Two Systems,” Op-ed, *Financial Times*, March 17, 1998.

“Blair Could Learn From US Tax Credit Scheme,” Letter to the Editor, *Financial Times*, June 23, 1997.

Lessons About Tax-benefit Integration from the US Earned Income Tax Credit Experience. Joseph Rowntree Foundation. York, England. 1997.

Teaching:

Public Economics (PhD field course), Harvard Economics Department. 2006, 2007, 2008, 2011.

Economic Analysis of Public Policy (public finance), Harvard Kennedy School. 1997, 2000, 2001, 2003, 2004, 2005, 2008, 2011, 2012, 2014, 2015, 2016, 2017, 2018, 2019.

Government Turnarounds, Harvard Kennedy School. 2017, 2018.

Empirical Methods II (regression analysis and program evaluation), Harvard Kennedy School. 1997, 1998.

Tax and Budget Policy, Harvard Kennedy School. 2000.

Doctoral Research Seminar, Harvard Kennedy School. 2000, 2001.

American Economic Policy, Harvard Economics Department (undergraduate) and Harvard Kennedy School. 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018.

New Members of Congress Program (presentations on Social Security and Medicare and economic outlook). 2000, 2002, 2012.

Proseminar on Inequality and Social Policy (PhD students), Harvard Department of Sociology and Harvard Kennedy School. 2005, 2007, 2010.

Appendix B - Materials Considered
(revised 5/08/2019)

Date	Author(s)	Title	Source
11/7/2018	Cuyahoga County Medical Examiner's Office	Heroin/Fentanyl/Cocaine Related Deaths in Cuyahoga County: 2018 October Update	http://medicalexaminer.cuyahogacounty.us/pdf_medicalexaminer/en-US/HeroinFentanylReports/110718-HeroinFentanylReport.pdf
12/17/2018	Summit County ADM Board	Summit County Opiate Task Force Quarterly Dashboard	SUMMIT_002053851
4/2/2015	Scott Wexelblatt, Susan Ford	Maternal Fetal Issues for Physicians: Optimal Care for Infants with neonatal abstinence syndrome, Presentation to the National RX Drug Abuse Summit	https://www.slideshare.net/OPUNITE/rx15-clinical-wed4301wexelblattford2warneroussosross
6/6/2017	Max Blau	STAT forecast: Opioids could kill nearly 500,000 Americans in the next decade	STAT, https://www.statnews.com/2017/06/27/opioid-deaths-forecast
2016	Cuyahoga County Board of Health	Cuyahoga County Opiate Task Force Report: 2016	CUYAH_000018265
6/25/2018	Summit County ADM Board	Summit County Opiate Task Force Meeting (Summit 001164135)	https://www.summitcountyaddictionhelp.org/Data/Sites/19/attachments/otf-stakeholders-mtg-notes-06182018-final.pdf
8/23/2018	Allison Pitt, Keith Humphreys, Margaret Brandeau	Modeling Health Benefits and Harms of Public Policy Responses to the US Opioid Epidemic	American Journal of Public Health. October 2018, Vol 108, No. 10: 1394-1400 and Supplement
7/31/2017	John Brooklyn and Stacey Sigmon	Vermont Hub-and-Spoke Model of Care For Opioid Use Disorder: Development, Implementation, and Impact	Journal of Addiction Medicine, Volume 11, Number 4, July/Aug. 2017
12/1/2018	Yamilette Hernandez et al.	How Massachusetts, Vermont, and New York are Taking Action to Address the Opioid Epidemic	American Journal of Public Health, 108(12), pp. 1621-1622
	American Society of Addiction Medicine	ASAM Patient Placement Criteria	https://www.asam.org/resources/the-asam-criteria/about
10/2/2018	Emma Sandoe, Carrie E. Fry, Richard G. Frank	Policy Levers That States Can Use To improve Opioid Addiction Treatment And Address The Opioid Epidemic	Health Affairs Blog, https://www.healthaffairs.org/doi/10.1377/hblog20180927.51221/full/

1/8/2013	Carlos Blanco et al.	Probability and predictors of treatment-seeking for prescription opioid use disorders: A National Study	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3636152/
12/1/2018	Joshua A. Barocas et al.	Estimated Prevalence of Opioid Use Disorder in Massachusetts, 2011-2015: A Capture-Recapture Analysis	American Journal of Public Health 108, no. 12 (December 1, 2018): pp. 1675-1681
	Ohio Department of Mental Health and Addiction Services	Workforce development as Part of the 21st Century Cures Act	
9/14/2015	Todd Molfenter et al.	Buprenorphine Prescribing Availability in a Sample of Ohio Specialty Treatment Organizations	Journal of Addictive Behaviors, Therapy & Rehabilitation, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4569134/pdf/nihms701827.pdf
7/24/2018	Monica Robbins	Local Health Experts Point to Syringe Exchange Program for drop in HIV cases among drug users	https://www.wkyc.com/article/news/health/local-health-experts-point-to-syringe-exchange-program-for-drop-in-hiv-cases-among-drug-users/95-577131339
6/8/2018	National Institute on Drug Abuse	Heroin: Why does heroin use create special risk for contracting HIV/AIDS and hepatitis B and C?	https://www.drugabuse.gov/publications/research-reports/heroin/why-are-heroin-users-special-risk-contracting-hiv-aids-hepatitis-b-c
	Blueprints for Healthy Youth Development	Project Towards No Drug Abuse: Detailed Evaluation Abstract	https://www.blueprintsprograms.org/evaluation-abstract/project-towards-no-drug-abuse
	Blueprints for Healthy Youth Development	Life Skill Trainings (LST): Detailed Evaluation Abstract	https://www.blueprintsprograms.org/evaluation-abstract/lifeskills-training-lst
9/28/2018	Barry Meisenberg, Jennifer Grover, Colson Campbell, Daniel Korpon	Assessment of Opioid Prescribing Practices Before and After Implementation of a Health System Intervention to Reduce Opioid Overprescribing	JAMA Network Open, https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2703950
3/25/2011	Dieter Henkel	Unemployment and Substance Use: A Review of the Literature (1990-2010)	Current Drug Abuse Reviews 4(1):4-27, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4601938/
1/3/2017	Joseph Boden et al.	Modelling possible causality in the associations between unemployment, cannabis use, and alcohol misuse	Social Science & Medicine, vol. 175, https://www.researchgate.net/publication/312274077_Modelling_possible_causality_in_the_associations_between_unemployment_cannabis_use_and_alcohol_misuse
2017	Bureau of Labor Statistics	2017 unemployment rates in Cleveland, Summit and Cuyahoga	https://www.bls.gov/lau/lacilg17.htm

2001	Barnett PG, Zaric GS, Brandeau ML.	The cost-effectiveness of buprenorphine maintenance therapy for opiate addiction in the United States.	Addiction
2014	Cicero TJ, Ellis MS, Surratt HL, Kurtz SP	The changing face of heroin use in the United States: a retrospective analysis of the past 50 years	JAMA Psychiatry. 2014;71(7):821-826
2013	Coffin PO, Sullivan SD	Cost-effectiveness of distributing naloxone to heroin users for lay overdose reversal	Annals of Internal Medicine, 2013;158(1):1-9.
2008	Fishbain DA et al.	What percentage of chronic nonmalignant pain patients exposed to chronic opioid analgesic therapy develop abuse/addiction and/or aberrant drug-related behaviors? A structured evidence-based review.	Pain Medicine 2008 May-Jun;9(4):444-59
5/20/2016	Goodnough A, Tavernise S	Opioid Prescriptions Drop for First Time in Two Decades	New York Times, https://www.nytimes.com/2016/05/21/health/opioid-prescriptions-drop-for-first-time-in-two-decades.html
2017	Hser Y-I, Mooney LJ, Saxon AJ, Miotto K, Bell DS, Huang D	Chronic pain among patients with opioid use disorder: results from electronic health records data	J Subst Abuse Treat. 2017;77:26-30.
2016	Kochanek KD, SI M, Xu JQ, Tejada-Vera B	Deaths: Final data for 2014	Natl Vital Stat Rep. 2016;65(4):1-122.
2013	Muhuri PK, Gfroerer JC, Davies MC	Associations of nonmedical pain reliever use and initiation of heroin use in the United States. Center for Behavioral Health Statistics and Quality Data Review 2013	http://www.samhsa.gov/data/sites/default/files/DR006/DR006/nonmedical-pain-relieveruse-2013.htm
2016	Schuckit MA	Treatment of opioid-use disorders	N Engl J Med. 2016;375(4):357-368.
2016	US Census Bureau	Annual estimates of the resident population by single year of age and sex for the United States: Apr. 1, 2010 to July 1, 2015.	https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?src=bkmk
2015	Vowles KE et al.	Rates of opioid misuse, abuse, and addiction in chronic pain: a systematic review and data synthesis.	Pain. 2015;156(4):569-576
2016	Xu JQ, Murphy SL, Kochanek KD, Bastian BA	Deaths: final data for 2013	Natl Vital Stat Rep. 2016;64(2):1-119
6/13/2018	Margaret Baughman and Mark Singer	Ohio MHAS Addiction Treatment Pilot Program Final Report Dec. 2015	

10/26/2017	Rosalie Liccardo Pacula	Estimating the costs of substitution therapy for heroin and opioid addiction in the United States: Insights and challenges	Rand Drug Policy Research Center - Lisbon Addiction Conference
7/13/2017	Rachel N. Lipari, Struther L. Can Horn, Arthur Hughes and Matthew Williams	State and Substate Estimates of Nonmedical Use of Prescription Pain Relievers	Substance Abuse and Mental Health Services Administration (SAMHSA), The CBHSQ Report
7/6/2018	Summit County Opiate Task Force	Summit County Opiate Task Force Quarterly Stakeholder Meeting Presentation	
7/7/2018	Summit County Public Health	Summit County Public Health Strategic Plan: 2017-2019 (Revised Jan. 2018)	https://www.scph.org/sites/default/files/editor/STRATPLAN217-19_FINAL.pdf
7/8/2018	Ohio Department of Higher Education	Substance Abuse Prevention Education	
7/8/2018	Substance Abuse and Mental Health Services Administration (SAMHSA)	Medications for Opioid Use Disorder for Healthcare and Addiction Professionals, Policymakers, Patients and Families	Substance Abuse and Mental Health Services Administration (SAMHSA) 2018
7/8/2018	Shawn A. Ryan	The Science of Addiction: Overview of Development and Treatment	
5/17/2013	Harvard Kennedy School, John F. Kennedy School of Government	Epilogue: The Consolidation of the Health Departments in Summit County, Ohio	
6/7/2017	Ohio State Finance Committee	Testimony of: Dr. Doug Smith, Medical Director/CCO County of Summit ADM Board	http://search-prod.lis.state.oh.us/cm_pub_api/api/unwrap/chamber/132nd_ga/ready_for_publication/committee_docs/cmte_s_finance_1/testimony/cmte_s_finance_1_2017-06-07-1000_538/dougsmithhb49t60717.pdf
8/29/2017	Centers for Disease Control	Guidelines for Prescribing Opioids for Chronic Pain - Pocket Guide: Tapering Opioids for Chronic Pain	Centers for Disease Control
2017	David Gilchrist	Weaning Off Opiates	https://masspaininitiative.org/files/DGilchrist_MassPIL_Spring2017.pdf
11/28/2018	Raj Gupta	Find Local Treatment	The Ohio State University Medical Center For the Ohio State Medical Center, Franklin County
1/4/2019	Summit County Public Health	Project Narrative - Summit County Public Health Community Medication Assisted Treatment Program	

2018	Summit County Public Health	Summit County Application for Federal Assistance	SUMMIT_001923700
8/1/2018	Department of Health and Human Services Food and Drug Administration Center for Drug Evaluation and Research (CDER)	Opioid Use Disorder: Endpoints for Demonstrating Effectiveness of Drugs for Medication-Assisted Treatment Guidance for Industry	Department of Health and Human Services Food and Drug Administration Center for Drug Evaluation and Research (CDER)
2017	National Academies of Sciences, Engineering, and Medicine	Pain Management and the Opioid Epidemic: Balancing Societal and Individual Benefits and Risks of Prescription Opioid Use	National Academies Press. https://doi.org/10.17226/24781
	Ohio Development Services Agency	Population Projections: County Totals	https://development.ohio.gov/files/research/P6090.pdf
2017	U.S. Department of Health and Human Services	National Survey of Substance Abuse Treatment Services (N-SSATS): 2017 Data on Substance Abuse Treatment Facilities	Substance Abuse and Mental Health Services Administration
3/24/2017	Michele Worobiec	Policy, Chapter 5: Court-Based Responses to the Opioid Crisis; Specialized Dockets Supreme Court of Ohio Columbus, Ohio	https://www.ohiobar.org/globalassets/advocacy/opiates-resource-page/5-worobiec.pdf
September 2018	Community Action Akron Summit	Combating the Opioid Epidemic in Summit County, OH: Pathways HUB Community Action	https://communityactionpartnership.com/wp-content/uploads/2018/09/The-Opioid-Crisis-and-Community-Actions-Response_Akron.pdf
1/11/2018	Cuyahoga County Medical Examiner's Office	Heroin/Fentanyl/Cocaine Related Deaths in Cuyahoga County: 2018 December Update	http://medicalexaminer.cuyahogacounty.us/pdf_medicalexaminer/en-US/HeroinFentanylReports/011119-HeroinFentanylReport.pdf
3/6/2019	Cuyahoga County Medical Examiner's Office	Cuyahoga County Medical Examiner's Office - Heroin/Fentanyl/Cocaine Related Deaths in Cuyahoga County 2019: February Update	http://medicalexaminer.cuyahogacounty.us/pdf_medicalexaminer/en-US/HeroinFentanylReports/CCMEOFeb2019HeroinFentanylCocaine.pdf
2/1/2019	Cuyahoga County Medical Examiner's Office	Cuyahoga County Medical Examiner's Office - Heroin/Fentanyl/Cocaine Related Deaths in Cuyahoga County 2019 Draft January Update	http://medicalexaminer.cuyahogacounty.us/pdf_medicalexaminer/en-US/HeroinFentanylReports/020119-HeroinFentanylReport.pdf
3/9/2019	Roger E. Backhouse and Jeff Biddle	The Concept of Applied Economics: A History of Ambiguity and Multiple Meanings	https://read.dukeupress.edu/hope/article-pdf/32/Suppl_1/1/427135/01-Biddlebackhouse.pdf

11/29/2018	Summit County	Alcohol, Drug Addiction & Mental Health Services Board, Report on Opiate Epidemic Impact	SUMMIT_002053751
8/14/2018		Deposition Transcript of Donna Skoda	
11/28/2018		Deposition Transcript of Shane Barker	
11/15/2017	Public Children Services Association of Ohio	Best Interests for Abused and Neglected Children: Working Toward Reunification During the Opioid Crisis	http://www.pcsao.org/pdf/advocacy/ReasonableEffortsWhitePaperNov2017.pdf
2016	Public Children Services Association of Ohio	Ohio's Opiate Epidemic and Child Protection: 2016	SUMMIT_000085306
2015-2016	Public Children Services Association of Ohio	PCSAO Factbook, 12th Edition 2015-2016	SUMMIT_001874511
2016-2017	Public Children Services Association of Ohio	PCSAO Factbook, 13th Edition 2016-2017	SUMMIT_001874721
2016-2017	Public Children Services Association of Ohio	PCSAO Factbook, 13th Edition 2016-2017: Summit County	SUMMIT_001874719
December 2018	Public Children Services Association of Ohio	The Opioid Epidemic's Impact on Children Services in Ohio	SUMMIT_000115686
September 2016	Public Children Services Association of Ohio	The Opioid Epidemic's Impact on Children Services in Ohio	SUMMIT_000105844
1/17/2019	Network of Care	Alcohol, Drug Addiction & Mental Health Services Board, SUD Services	http://summit.oh.networkofcare.org/mh/services/subcategory.aspx?tax=RX-8450.1150
6/25/2018	Summit County ADM Board	Summit County Opioid Task Force: Quarterly Stakeholders Meeting	SUMMIT_001472861
6/20/2018		Summit County and City of Akron, Ohio Plaintiff First Amended Responses and Objections to Distributor Defendants' First Set of Interrogatories	
2014	Summit County Children Services	Summit County Children Services, 2014 Annual Report: Finding Forever Families	SUMMIT_000003930
2015	Summit County Children Services	2015 Annual Report: Bring Dads into the Picture	SUMMIT_000003942
2016	Summit County Children Services	2016 Annual Report: The Challenge of Protecting Children During the Opioid Epidemic	SUMMIT_000003954
2017	Summit County Children Services	2017 Annual Report: Safety, Permanency, Well-Being. That's what we do ... every day	SUMMIT_002052855

12/27/2018	Summit County Opiate & Addiction Task Force	2018 Highlights	SUMMIT_002053857
12/27/2018	Summit County Opiate & Addiction Task Force	2019 Meeting Calendar	SUMMIT_002053885
12/17/2018	Summit County Opiate & Addiction Task Force	Public Quarterly Meeting Agenda	
12/17/2018	Summit County Opiate & Addiction Task Force	Public Quarterly Meeting: 4th Quarter – Year End	SUMMIT_002053822
2018	Summit County Public Health	Population Health Vital Statistics Brief: Vol. 3: Drug Overdoses, Apr. 1 – Apr. 30, 2018	SUMMIT_000027084
October 2017	Mark Rembert et al.	Taking Measure of Ohio's Opioid Crisis	C. William Swank Program in Rural-Urban Policy
2016	Summit County Public Health	Population Health Vital Statistics Brief: Vol. 3: Drug Overdoses, Jan 1 – Nov 30, 2016	SUMMIT_000037338
2017	Summit County Public Health	Population Health Vital Statistics Brief: Vol. 3: Drug Overdoses, Jan 1 – Nov 30, 2017	SCGHD_000001051
	Summit County	Critical Intervention Points for Change: Summit County	SUMMIT_000027115
6/25/2018	Summit County	Historical Revenues and Expenditures: Alcohol, Drug & Mental Health	SUMMIT_000111606
6/25/2018	Summit County	Historical Revenues and Expenditures: Common Pleas	SUMMIT_000111607
6/25/2018	Summit County	Historical Revenues and Expenditures: Children Services Board	SUMMIT_000111608
6/25/2018	Summit County	Historical Revenues and Expenditures: Executive	SUMMIT_000111609
6/25/2018	Summit County	Historical Revenues and Expenditures: Job and Family Services	SUMMIT_000111610
6/25/2018	Summit County	Historical Revenues and Expenditures: Medical Examiner Lab Fund	SUMMIT_000111611
6/25/2018	Summit County	Historical Revenues and Expenditures: Medical Examiner	SUMMIT_000111612
6/25/2018	Summit County	Historical Revenues and Expenditures: Prosecutor	SUMMIT_000111613
6/25/2018	Summit County	Historical Revenues and Expenditures: Sheriff	SUMMIT_000111614
6/25/2018	Summit County	Historical Revenues and Expenditures: Veteran's Service Commission	SUMMIT_000111615

3/20/2018	Summit County	Sequential Intercept Mapping and Action Planning for Opioid Epidemic Response	SUMMIT_000349556 SUMMIT_001448247
2017	Waite, K., Deeken, A., Perch, S., & Kohler, L. J	Carfentanil and Current Opioid Trends in Summit County, Ohio	Academic Forensic Pathology, 7(4), 632–639, SUMMIT_000031143
11/19/2018		Deposition Transcript of Molly Leckler	
12/19/1996	Antonnette Graham, Norman Graham, et al.	Miracle Village: A Recovery Community for Addicted Women and Their Children in Public Housing	Journal of Substance Abuse Treatment, Vol. 14, No.3 pp.275-284, 1997 (accessed at https://www.journalofsubstanceabusetreatment.com/article/S0740-5472(97)00007-X/fulltext)
2017	Cuyahoga County Sherriff's Dept.	Cuyahoga County Corrections Center (CCCC) End of Year Report, 2017	CUYAH_000097408
2018		Calendar Year 2018 Funding Recommendations by Provider,	CUYAH_001350090
5/9/2017	Cuyahoga County Medical Examiner's Office	Cost of Heroin/Fentanyl Crisis, Fiscal Impacts to CCMEO Operations Update	CUYAH_001629584
6/20/2017	The Ohio Perinatal Quality Collaborative	Updates/Changes to the recommended OPQC NAS Protocol	https://opqc.net/sites/bmidrupalpopqc.chmcres.cchmc.org/files/NAS/OPQC%20Recommended%20NAS%20Protocol%20Changes%202017.pdf
9/10/2018	Cuyahoga County ADAMHS Board	A Leader in Combatting the Opioid Crisis in Cuyahoga County Update	http://adamhsc.org/pdf_adamhsc/en-US/(no%20numbers%20version%20for%20website)%20ADAMHS%20A%20Leader%20in%20Combating%20the%20Heroin%20Crisis%20UPDATE%20September.pdf
2018	Cuyahoga County ADAMHS Board	Provider Network Guide 2018	http://adamhsc.org/pdf_adamhsc/en-US/PosterChart2019%20WEB%20FINAL.PDF
2017	Summit County	SCCS 2017 Budget	SUMMIT_001128330
2018	Summit County	SCCS 2018 Budget	SUMMIT_000990286
2017	Summit County	2017 Summit Medical Examiner Annual Report	SUMMIT_000022439
	Summit County	Cost Narrative	SUMMIT_000028305
2017	Summit County	2017 ADM Budget Review	SUMMIT_000019668
	City of Akron	Akron Opiate Incidents.xlsx	AKRON_000004036
	Cuyahoga County Sheriff's Dept.	Jail.xls	CUYAH_012341077
2006-2017	Cuyahoga County	CCMEO 2006-2017 overdose data.xlsx	CUYAH_000099975
	Cuyahoga County	FTEs by Division.xls	CUYAH_001714366

	Cuyahoga County	Copy of payroll agency numbers2.xlsx	CUYAH_002426281
2013	Cuyahoga County	EE 2013 - 6 agencies.xlsx	CUYAH_002426282
2014	Cuyahoga County	EE 2014 - 6 agencies.xlsx	CUYAH_002426283
2015	Cuyahoga County	EE 2015 - 6 agencies.xlsx	CUYAH_002426284
2016	Cuyahoga County	EE 2016 - 6 agencies.xlsx	CUYAH_002426285
2017	Cuyahoga County	EE 2017 - 6 agencies.xlsx	CUYAH_002426286
	Cuyahoga County	pub11.xlsx	CUYAH_002426287
	Cuyahoga County	pub12.xlsx	CUYAH_002426288
2006-2017	Cuyahoga County	Total Expenditures - 2006-2017 - by subobject.xls	CUYAH_000018178
	City of Cleveland	Purchases of Naloxone and Mucosal Atomization	CLEVE_001627553
	City of Cleveland	Opioid Overdose Chart	CLEVE_000010988
2016-2018	City of Cleveland	Narcan Administered Summary 2016-May 16 2018.docx	CLEVE_000248973
2018	City of Cleveland	2018 Budget Book	CLEVE_000010463
11/13/2018		Deposition Transcript of C. Weiskittel	
11/20/2018		Deposition Transcript of G. Gingell	
9/2/2016	U.S. DOD, Office of the Secretary	32 CFR Part 199. TRICARE; Mental Health and Substance Use Disorder Treatment.	Federal Register, Vol. 81, No. 171, 61068-61098
7/15/2015	Noam Kirson, Amie Shei, J. Bradford Rice	The Burden of Undiagnosed Opioid Abuse Among Commercially Insured Individuals	Pain Medicine 2015; 16: 1325-1332 https://academic.oup.com/painmedicine/article/16/7/1325/1917718
7/1/2014	Edwinah Atusingwize, Sarah Lewis, Tessa Langley	Economic evaluations of tobacco control mass media campaigns: a systematic review	https://tobaccocontrol.bmj.com/content/24/4/320
2015	Summit County ADM Board	2015 Annual Report	SUMMIT_001054571
3/1/2017	Thomas Gilson, Hugh Shannon, Jaime Freiburger	The Evolution of the Opiate/Opioid Crisis in Cuyahoga County	Academic Forensic Pathology International www.afpjournal.com
2018	Jennifer Carroll, Traci Green, Rita Noonan	Evidence-Based Strategies for Preventing Opioid Overdose: What's Working in the United States	Centers for Disease Control and Prevention, https://www.cdc.gov/drugoverdose/pdf/pubs/2018-evidence-based-strategies.pdf
2018	Jocelyn Davis, Karen Frantz	Maternal-fetal Opiate Medical Home (MOMH)	https://www.ohiohospitals.org/OHA/media/Images/Patient%20Safety%20and%20Quality/Documents/Patient%20Safety%20Awareness%20Week/2018-PSW-Final-ppt-NR-Feb-12-Maternal-Opiate-Addiction-MOMH-OPSI-pptm.pdf

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5/9/2018	Lisa Clemans-Cope, Douglas Wissoker, Marni Epstein	California County Facts Sheets: Treatment Gaps in Opioid-Agonist Medication-Assisted Therapy (OA-MAT) and Estimates of How Many Additional Prescribers Are needed	Urban Institute https://www.urban.org/sites/default/files/ca_county_fact_sheets_methodological_appendix.pdf
8/1/2018	Sheena Taha	Best Practices across the Continuum of Care for the Treatment of Opioid Use Disorder	Canadian Centre on Substance Use and Addiction
2017	R. Corey Waller	Changing the Orange County Addiction Treatment Ecosystem	The National Center for Complex Health and Social Needs, https://www.orangecountygov.com/DocumentCenter/View/9288/Changing-the-Orange-County-Addiction-Treatment-System-PDF?bidId=

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	John Kasich, Tracy Plouck	Outlining a Pathway to Increase Prescribers with a DEA DATA 2000 Waiver	Ohio Department of Mental Health and Addiction Services
5/31/2018	Kyle Fee	The Opioid Epidemic and Its Effects	Federal Reserve Bank of Cleveland.
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8/24/2018	Summit County Jail Operations Advisory Commission	Report and Recommendations	SUMMIT_001773045

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2/14/2017	Sarah Cousins, Desiree Crevecoeur-MacPhail, et al.	The Los Angeles County hub-and-provider network for promoting the sustained use of extended-release naltrexone (XR-NTX) in Los Angeles County (2010-2015)	J Subst Abuse Treat. 2018 Feb;85:78-83
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4/1/2016	Economic Policy Institute	The cost of child care in Ohio	https://www.epi.org/child-care-costs-in-the-united-states/#/OH
		GenerationRx Project website	https://stoprxabuseinga.org/generation-rx-project
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2019	HUD	FY 2019 Fair Market Rent Documentation System	https://www.huduser.gov/portal/datasets/fmr.html
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3/14/2018	SAMHSA/HHS	An Update on the Opioid Crisis	https://www.samhsa.gov/sites/default/files/aatod_2018_final.pdf
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2017	Tarry House, Inc.	2017 Annual Report	http://tarryhouse.org/wp-content/uploads/2018/05/2017-Tarry-House-Annual-Report-PDF.pdf
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		The Harvard Kennedy School Government Performance Lab Fellowship Position	https://hwpi.harvard.edu/files/govlabs/files/gpl_fellowship_job_description_2019.pdf
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2/22/2019	Michael C. O'Malley	Assistant Prosecuting Attorney, Cuyahoga County Prosecutor's Office	https://www.linkedin.com/jobs/view/assistant-prosecuting-attorney-at-cuyahoga-county-prosecutor-s-office-michael-c-o-malley-1074576227/
4/2/2019	Summit County Prosecutor	County of Summit Applicant Portal Assistant County Prosecutor 1	https://jobs.summitoh.net/postings/14953
4/2/2019	Cuyahoga County Prosecutor's Office	Divisions and Units	prosecutor.cuyahogacounty.us/en-US/units-divisions.aspx
		Heroin Related Death Investigations	AKRON_001121745
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9/9/2014	U.S. DOJ, Drug Enforcement Administration	21 CFR Parts 1300, 1301, 1304, et al. Disposal of Controlled Substances; Final Rule	Federal Register, Vol. 79, No. 174, 53520-53570
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	North Carolina Department of Insurance, Child Fatality Task Force	Safe Drug Disposal Costs	https://ncdoi.com/osfm/safekids/Documents/OMD/Safe%20Drug%20Disposal%20Fact%20Sheet.pdf
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4/3/2019		Clinical Study Results HARVONI® (ledipasvir 90 mg/sofosbuvir 400 mg) tablets	https://www.harvoni.com/discover-harvoni/clinical-study-results
7/20/2018	Ohio Department of Health	Cuyahoga County HIV Surveillance Data Tables	https://odh.ohio.gov/wps/portal/gov/odh/know-our-programs/hiv-aids-surveillance-program/resources/cuyahoga-county-hiv-surveillance-data-tables
7/20/2018	Ohio Department of Health	Summit County HIV Surveillance Data Tables	https://odh.ohio.gov/wps/portal/gov/odh/know-our-programs/hiv-aids-surveillance-program/resources/summit-county-hiv-surveillance-data-tables
4/3/2019		EPCLUSA® (sofosbuvir 400 mg/velpatasvir 100 mg) tablets What Is EPCLUSA?	https://www.epclusa.com/what-is-epclusa/
5/27/2018	Lindsey Dawson and Jennifer Kates	HIV and the Opioid Epidemic: 5 Key Points The Henry J. Kaiser Family Foundation	https://www.kff.org/hiv/aids/issue-brief/hiv-and-the-opioid-epidemic-5-key-points/
3/8/2017	Centers for Disease Control and Prevention	HIV Cost-effectiveness, Division of HIV/AIDS Prevention, National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention	https://www.cdc.gov/hiv/programresources/guidance/costeffectiveness/index.html
1/29/2019	Centers for Disease Control and Prevention	HIV in the United States and Dependent Areas, Division of HIV/AIDS Prevention, National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention	https://www.cdc.gov/hiv/statistics/overview/ata glance.html
9/7/2018	Substance Abuse and Mental Health Services Administration	Results From The 2017 National Survey On Drug Use And Health: Detailed Tables	

10/23/2017	Louisa Degenhardt, Amy Peacock, Samantha Colledge et. al.	Global prevalence of injecting drug use and sociodemographic characteristics and prevalence of HIV, HBV, and HCV in people who inject drugs: a multistage systematic review, Lancet Glob Health 2017; 5: e1192–207	http://dx.doi.org/10.1016/S2214-109X(17)30375-3
12/28/2017	Justin Sayers	They bond over pain. In this Louisville program, inmates don't have to detox alone, Louisville Courier Journal	https://www.courier-journal.com/story/news/local/2017/12/28/louisville-largest-detox-program-brings-common-bonds-pain-hope-jail-inmates/612766001/
2017	Cuyahoga County Sheriff's Department	2017 Annual Report	https://sheriff.cuyahogacounty.us/pdf_sheriff/en-US/AnnualReports/2017AnnualReport.pdf
2017	Summit County Sheriff's Office	2017 Annual Report	https://co.summitoh.net/SHERIFF/images/stories/PDFs/2017%20annual%20report.pdf
5/23/2018	Kenneth V. Mills		CUYAH_003505168-67
4/21/2016	Donisha Greene	Cuyahoga County Launches Comprehensive Reentry Services at Euclid Jail	executive.cuyahogacounty.us/en-US/CC-LaunchesCompReentrySrvs-EuclidJail.aspx
9/6/2017	Barbara Poppe and associates	What will it take to end homelessness in Ohio?, Data Analysis prepared for the Ohio Development Services Agency (DSA) and Ohio Mental Health and Addiction Services (OMHAS)	https://development.ohio.gov/files/cs/FinalStatewideDataReport.pdf
6/6/2017	Karen Farkas	What you need to know about the Cleveland-Cuyahoga County jail agreement	https://www.cleveland.com/cuyahoga-county/2017/06/cuyahoga-county-to-merge-operations.html
February 2018	Cuyahoga County Division of Children and Family Services	2017 Statistical Report, January - December 2017	http://cfs.cuyahogacounty.us/en-US/Statistical-Reports.aspx
November 2018	Cuyahoga County Division of Children and Family Services	2018 Statistical Report, January - September 2018	http://cfs.cuyahogacounty.us/en-US/Statistical-Reports.aspx
August 2013	Public Children Services Association of Ohio	Ohio Child Welfare Functional Job Analysis Research, Caseload Complexity Survey – Preliminary Report	http://www.pcsao.org/perch/resources/prelim-report-of-survey-results-8-13.pdf
3/9/2018	Robin Ghertner, Melinda Baldwin, Gilbert Crouse, et al.	The Relationship between Substance Use Indicators and Child Welfare Caseloads, ASPE Research Brief, U.S. Department of Health and Human Services	
December 2017	Public Children Services Association of Ohio	The Opioid Epidemic's Impact on Children Services in Ohio	http://www.pcsao.org/pdf/advocacy/OpioidBriefingSlidesUpdated12-17.pdf

April 2018	U.S. Department of Health and Human Services	Implementing Nurse-Family Partnership (NFP), Home Visiting Evidence of Effectiveness, Administration for Children & Families	https://homvee.acf.hhs.gov/Implementation/3/Nurse-Family-Partnership--NFP--Estimated-Costs-of-Implementation/14/5
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9/24/2018	Gilead Sciences, Inc.	Gilead Subsidiary to Launch Authorized Generics of Eplclusa® (Sofosbuvir/Velpatasvir) and Harvoni® (Ledipasvir/Sofosbuvir) for the Treatment of Chronic Hepatitis C	https://www.businesswire.com/news/home/20180924005499/en
		Vehicle Ownership in U.S. Cities Data and Map	https://www.governing.com/gov-data/car-ownership-numbers-of-vehicles-by-city-map.html
12/17/2013	Substance Abuse and Mental Health Services Administration (SAMHSA)	National Survey of Substance Abuse Treatment Services (N-SSATS) Report: 39 Percent of Substance Abuse Treatment Facilities Offer Transportation Assistance to Treatment	https://www.samhsa.gov/data/sites/default/files/spot071-transportation-assistance-2013.pdf
2006	Center for Substance Abuse Treatment.	Detoxification and Substance Abuse Treatment. Treatment Improvement Protocol (TIP) Series, No. 45. HHS Publication No. (SMA) 15-4131.	https://store.samhsa.gov/system/files/sma15-4131.pdf
June 2018	National Institute on Drug Abuse	What are the treatments for heroin use disorder?	https://www.drugabuse.gov/publications/research-reports/heroin/what-are-treatments-heroin-use-disorder
4/1/2019	Salary.com	Salary for Medical Social Worker (MSW) in Akron, OH	https://www1.salary.com/OH/Akron/Medical-Social-Worker-MSW-Salary.html
4/1/2019	Salary.com	Salary for Medical Social Worker (MSW) in Cleveland, OH	https://www1.salary.com/OH/Cleveland/medical-social-worker-msw-salary.html
3/17/2019	Glassdoor	Salary: Recovery Coach	https://www.glassdoor.com/Salaries/recovery-coach-salary-SRCH_KO0,14.htm
4/21/2011	Andrew Rosenblum, Charles M. Cleland, Chunki Fong et al.	Distance Traveled and Cross-State Commuting to Opioid Treatment Programs in the United States	Journal of Environmental and Public Health, Volume 2011 (doi:10.1155/2011/948789)
August 2013	National Alliance on Mental Illness (NAMI)	Coming Home A Guide to Re-entry Planning for Prisoners Living with Mental Illnesses	https://www.nami.org/getattachment/Find-Support/Living-with-a-Mental-Health-Condition/Navigating-the-Justice-System/Re-entering-the-Community/NAMIComingHomeReentryGuideAug2013.pdf
5/4/2016	Center for Disease Control and Prevention	Hepatitis C Kills More Americans than Any Other Infectious Disease	https://www.cdc.gov/media/releases/2016/p0504-hepc-mortality.html
	HUD Homelessness Data Exchange		https://www.hudexchange.info/programs/hdx/

	SAMHSA's Center for the Application of Prevention Technologies	Media Campaigns to Prevent Prescription Drug and Opioid Misuse	http://www.opioidpreventionatwork.org/assets/media-campaigns-prevent-rx-drugs-opioid-misuse.pdf
3/19/2019	Glassdoor	School Counselor Salaries in Akron, OH Area	https://www.glassdoor.com/Salaries/cuyahoga-falls-school-counselor-salary-SRCH_IL.0,14_IC1145536_KO15,31.htm
3/19/2019	Glassdoor	School Counselor Salaries in Cleveland, OH Area	https://www.glassdoor.com/Salaries/cleveland-heights-school-counselor-salary-SRCH_IL.0,17_IC1163288_KO18,34.htm
	National Center for Education Statistics	Elementary/Secondary Information System (ELSI)	http://nces.ed.gov/ccd/elsi/
	Bureau of Labor Statistics	Inflation & Prices Data	https://www.bls.gov/data/#prices
	Bureau of Labor Statistics	Pay & Benefits Data	https://www.bls.gov/data/#wages
	Bureau of Labor Statistics	CPI Inflation Calculator	https://data.bls.gov/cgi-bin/cpicalc.pl

All other documents and data cited in the report, tables, and appendices.

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Table C.0

ODU Population in Year 1, Cuyahoga County

[1]	ODU Rate	1.4%
[2]	Cuyahoga County population 12+, 2017	1,077,588
[3]	ODU population, Year 1	15,167
[4]	% ODU population receiving treatment	20.0%
[5]	ODU population receiving treatment, Year 1	3,033
[6]	MAT % of ODU treatment	33.3%
[7]	ODU population receiving MAT, Year 1	1,011

Sources and Notes:

[1]=0.77% ODU prevalence + 0.63% HUD prevalence. See Pitt AL, Humphreys K, and Brandeau ML (2018), Supplement at S4 and Table A. 0.63% HUD prevalence = 0.51% HUD after ODU prevalence / 80% of HUD individuals with ODU first.

[2]: National Center for Health Statistics, Bridged-Race Population Estimates, July 1st resident population age 12 or older, Cuyahoga County.

[3]=[1]*[2].

[4], [6]: Based on available data on treatment received by the population with ODU. See e.g., SAMHSA/HHS: An Update on the Opioid Crisis, March 14, 2018 at p. 2 ("Only 20% with ODU received specialty addiction treatment"); Emma Sandoe, Carrie E. Fry and Richard G. Frank, "Policy Levers That States Can Use to Improve Opioid Addiction Treatment and Address the Opioid Epidemic," Health Affairs, October 2, 2018 ("Fewer than 10 percent of those with an ODU receive MAT").

[5]=[3]*[4].

[7]=[5]*[6].

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Table S.0
ODU Population in Year 1, Summit County

[1]	ODU Rate	1.4%
[2]	Summit County population 12+, 2017	467,186
[3]	ODU population, Year 1	6,576
[4]	% ODU population receiving treatment	20.0%
[5]	ODU population receiving treatment, Year 1	1,315
[6]	MAT % of ODU treatment	33.3%
[7]	ODU population receiving MAT, Year 1	438

Sources and Notes:

[1]=0.77% ODU prevalence + 0.63% HUD prevalence. See Pitt AL, Humphreys K, and Brandeau ML (2018), Supplement at S4 and Table A. 0.63% HUD prevalence = 0.51% HUD after ODU prevalence / 80% of HUD individuals with ODU first.

[2]: National Center for Health Statistics, Bridged-Race Population Estimates, July 1st resident population age 12 or older, Summit County.

[3]=[1]*[2].

[4], [6]: Based on available data on treatment received by the population with ODU. See e.g., SAMHSA/HHS: An Update on the Opioid Crisis, March 14, 2018 at p. 2 ("Only 20% with ODU received specialty addiction treatment"); Emma Sandoe, Carrie E. Fry and Richard G. Frank, "Policy Levers That States Can Use to Improve Opioid Addiction Treatment and Address the Opioid Epidemic," Health Affairs, October 2, 2018 ("Fewer than 10 percent of those with an ODU receive MAT").

[5]=[3]*[4].

[7]=[5]*[6].

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Table I
Historical and Projected Inflation

	1/2009 to 12/2018 [A]	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
<i>Actual inflation:</i>																			
[1] Consumer price index, all items	19.2%	2.1%	1.9%																
[2] Consumer price index, prescription drugs	37.2%	2.8%	(0.6%)																
[3] Consumer price index, medical care services	34.0%	1.6%	2.6%																
[4] Employment cost index, private industry	23.1%	2.6%	3.0%																
[5] Employment cost index, state and local govt	22.7%	2.5%	2.7%																
<i>Projected inflation:</i>																			
[6] Consumer price index, all items				2.1%	2.6%	2.6%	2.5%	2.5%	2.4%	2.3%	2.3%	2.3%	2.3%	2.4%	2.4%	2.4%	2.4%	2.4%	2.4%
[7] Consumer price index, prescription drugs				4.1%	5.0%	5.0%	4.8%	4.8%	4.6%	4.4%	4.4%	4.4%	4.4%	4.6%	4.6%	4.6%	4.6%	4.6%	4.6%
[8] Consumer price index, medical care services				3.7%	4.6%	4.6%	4.4%	4.4%	4.2%	4.1%	4.1%	4.1%	4.1%	4.2%	4.2%	4.2%	4.2%	4.2%	4.2%
[9] Employment cost index, private industry				3.4%	3.6%	3.6%	3.4%	3.3%	3.2%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%
[10] Employment cost index, state and local govt				3.3%	3.5%	3.5%	3.3%	3.2%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%

Sources and Notes:

[1]-[5]: Bureau of Labor Statistics. CPI series are for U.S. city average, all urban consumers, seasonally adjusted. ECI series are for total compensation, all industries and occupations.

[6], [9]: Congressional Budget Office, The Budget and Economic Outlook: 2019 to 2029. Table E-1.

[7]=[6]*([2A]/[1A]).

[8]=[6]*([3A]/[1A]).

[10]=[9]*([5A]/[4A]).

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APPENDIX D: TREATMENT

Table C.1
Estimated Cost of Treatment, Cuyahoga County

		Year 1 2020	Year 2 2021	Year 3 2022	Year 4 2023	Year 5 2024	Year 6 2025	Year 7 2026	Year 8 2027	Year 9 2028	Year 10 2029	Year 11 2030	Year 12 2031	Year 13 2032	Year 14 2033	Year 15 2034
<i>Projected population receiving treatment</i>																
[1]	Population receiving treatment, low case	3,033	4,045	5,056	6,067	6,067	6,067	5,842	5,617	5,393	5,168	4,943	4,719	4,494	4,269	4,045
[2]	Population receiving treatment, base case	3,033	4,045	5,056	6,067	6,067	6,067	6,067	6,067	6,067	6,067	6,067	6,067	6,067	6,067	6,067
[3]	Population receiving treatment, high case	3,033	4,045	5,056	6,067	6,067	6,067	6,292	6,516	6,741	6,966	7,190	7,415	7,640	7,864	8,089
<i>Estimated cost of treatment</i>																
		<i>2019\$ [A]</i>														
[4]	Average cost of treatment provided	\$24,023 / person	\$25,126	\$26,279	\$27,439	\$28,650	\$29,864	\$31,077	\$32,339	\$33,652	\$35,018	\$36,502	\$38,048	\$39,660	\$41,341	\$44,918
<i>Specialized facility for families</i>																
		<i>2019\$ [B]</i>														
[5]	# of residential units required	75														
[6]	Housing cost per unit	\$10,032														
[7]	Childcare cost per unit	\$9,541														
[8]	Resident costs (\$000s)	\$1,468														
[9]	Other operating costs (\$000s)	\$1,165														
[10]	Cost of facility (\$000s)	\$2,633	\$2,702	\$2,772	\$2,841	\$2,912	\$2,982	\$3,051	\$3,121	\$3,193	\$3,266	\$3,345	\$3,425	\$3,507	\$3,591	\$3,678
<i>Total cost of treatment</i>																
		<i>2020-2034 [C]</i>														
[11]	Low case (\$000s)	\$2,595,019	\$78,920	\$109,060	\$141,565	\$176,728	\$184,163	\$191,588	\$192,047	\$192,228	\$192,109	\$191,987	\$191,510	\$190,650	\$189,374	\$187,649
[12]	Base case (\$000s)	\$3,003,359	\$78,920	\$109,060	\$141,565	\$176,728	\$184,163	\$191,588	\$199,313	\$207,351	\$215,714	\$224,794	\$234,257	\$244,120	\$254,398	\$265,111
[13]	High case (\$000s)	\$3,411,700	\$78,920	\$109,060	\$141,565	\$176,728	\$184,163	\$191,588	\$206,580	\$222,474	\$239,320	\$257,601	\$277,004	\$297,589	\$319,422	\$342,573

Sources and Notes:

See Table I for actual and projected inflation rates used.

[A]: Based on ASAM treatment guidelines and a study of the economic costs of substance abuse treatments (Alexandre PK, Beulaygue IC, French MT et al. (2012)). Calculation assumes 30% receive intensive outpatient treatment, 30% receive partial hospitalization treatment, 30% receive adult residential treatment, and 10% receive outpatient treatment. Calculation also assumes 50% receive detox services before initiating treatment and 30% receive recovery housing during or after treatment. I reserve the right to modify this calculation if new data on treatment needs become available.

[C]=Σ(Year 1 to Year 15).

[1]-[3]: Year 1 from Table C.0[5]. Projects that the number of individuals receiving treatment doubles by Year 4. Base case projects the number of individuals receiving treatment remains constant thereafter. Low case projects that the number of individuals receiving treatment will decline by 1/3 from Year 5 to Year 15. High case projects that the number of individuals receiving treatment will increase by 1/3 from Year 5 to Year 15.

[4]: Estimated cost based on [A] and medical care services inflation.

[5]: Double the capacity of Miracle Village, which was a 30-unit apartment building for mothers receiving intensive treatment.

[6]: Based on HUD fair market rent in 2019 for a 2-bedroom residence in Cuyahoga County.

[7]: Average cost of infant childcare in Ohio, as reported by the Economic Policy Institute.

[8]=[5]*([6]+[7])/10³.

[9]: Based on the (inflation-adjusted) expenditures of Tarry House, a program in Summit County that provided residential recovery/treatment, respite housing, supported housing and community psychiatric and supportive treatment (CPST) and counseling services to nearly 250 different people in 2017.

[10]: [10B]=[8]+[9]. Year 1 onward grown at projected inflation.

[11]=([1]*[4])/10³+ [10].

[12]=([2]*[4])/10³+ [10].

[13]=([3]*[4])/10³+ [10].

Table S.1
Estimated Cost of Treatment, Summit County

		Year 1 2020	Year 2 2021	Year 3 2022	Year 4 2023	Year 5 2024	Year 6 2025	Year 7 2026	Year 8 2027	Year 9 2028	Year 10 2029	Year 11 2030	Year 12 2031	Year 13 2032	Year 14 2033	Year 15 2034
<i>Projected population receiving treatment</i>																
[1]	Population receiving treatment, low case	1,315	1,754	2,192	2,630	2,630	2,630	2,533	2,435	2,338	2,241	2,143	2,046	1,948	1,851	1,754
[2]	Population receiving treatment, base case	1,315	1,754	2,192	2,630	2,630	2,630	2,630	2,630	2,630	2,630	2,630	2,630	2,630	2,630	2,630
[3]	Population receiving treatment, high case	1,315	1,754	2,192	2,630	2,630	2,630	2,728	2,825	2,923	3,020	3,117	3,215	3,312	3,410	3,507
<i>Estimated cost of treatment</i>																
		<i>2019\$ [A]</i>														
[4]	Average cost of treatment provided	\$24,023 / person	\$25,126	\$26,279	\$27,439	\$28,650	\$29,864	\$31,077	\$32,339	\$33,652	\$35,018	\$36,502	\$38,048	\$39,660	\$41,341	\$44,918
<i>Specialized facility for families</i>																
		<i>2019\$ [B]</i>														
[5]	# of residential units required	30														
[6]	Housing cost per unit	\$9,720														
[7]	Childcare cost per unit	\$9,541														
[8]	Resident costs (\$000s)	\$578														
[9]	Other operating costs (\$000s)	\$1,165														
[10]	Cost of facility (\$000s)	\$1,743	\$1,789	\$1,835	\$1,881	\$1,928	\$1,974	\$2,020	\$2,066	\$2,114	\$2,162	\$2,214	\$2,267	\$2,322	\$2,377	\$2,493
<i>Total cost of treatment</i>																
		<i>2020-2034 [C]</i>														
[11]	Low case (\$000s)	\$1,136,064	\$34,833	\$47,916	\$62,024	\$77,285	\$80,525	\$83,759	\$83,975	\$84,070	\$84,035	\$84,000	\$83,811	\$83,457	\$82,923	\$81,257
[12]	Base case (\$000s)	\$1,313,100	\$34,833	\$47,916	\$62,024	\$77,285	\$80,525	\$83,759	\$87,125	\$90,626	\$94,269	\$98,223	\$102,344	\$106,639	\$111,114	\$115,778
[13]	High case (\$000s)	\$1,490,135	\$34,833	\$47,916	\$62,024	\$77,285	\$80,525	\$83,759	\$90,275	\$97,183	\$104,503	\$112,447	\$120,877	\$129,820	\$139,305	\$149,362

Sources and Notes:

See Table I for actual and projected inflation rates used.

[A]: Based on ASAM treatment guidelines and a study of the economic costs of substance abuse treatments (Alexandre PK, Beulaygue IC, French MT et al. (2012)). Calculation assumes 30% receive intensive outpatient treatment, 30% receive partial hospitalization treatment, 30% receive adult residential treatment, and 10% receive outpatient treatment. Calculation also assumes 50% receive detox services before initiating treatment and 30% receive recovery housing during or after treatment. I reserve the right to modify this calculation if new data on treatment needs become available.

[C]=Σ(Year 1 to Year 15).

[1]-[3]: Year 1 from Table S.0[5]. Projects that the number of individuals receiving treatment doubles by Year 4. Base case projects the number of individuals receiving treatment remains constant thereafter. Low case projects that the number of individuals receiving treatment will decline by 1/3 from Year 5 to Year 15. High case projects that the number of individuals receiving treatment will increase by 1/3 from Year 5 to Year 15.

[4]: Estimated cost based on [A] and medical care services inflation.

[5]: Based on the capacity of Miracle Village, which was a 30-unit apartment building for mothers receiving intensive treatment.

[6]: Based on HUD fair market rent in 2019 for a 2-bedroom residence in Summit County.

[7]: Average cost of infant childcare in Ohio, as reported by the Economic Policy Institute.

[8]=[5]*([6]+[7])/10³.

[9]: Based on the (inflation-adjusted) expenditures of Tarry House, a program in Summit County that provided residential recovery/treatment, respite housing, supported housing and community psychiatric and supportive treatment (CPST) and counseling services to nearly 250 different people in 2017.

[10]: [10B]=[8]+[9]. Year 1 onward grown at projected inflation.

[11]=([1]*[4])/10³+ [10].

[12]=([2]*[4])/10³+ [10].

[13]=([3]*[4])/10³+ [10].

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Table C.2
Estimated Cost of MAT, Cuyahoga County

		Year 1 2020	Year 2 2021	Year 3 2022	Year 4 2023	Year 5 2024	Year 6 2025	Year 7 2026	Year 8 2027	Year 9 2028	Year 10 2029	Year 11 2030	Year 12 2031	Year 13 2032	Year 14 2033	Year 15 2034
[1]	MAT % of population receiving treatment	33.3%	44.4%	55.6%	66.7%	66.7%	66.7%	66.7%	66.7%	66.7%	66.7%	66.7%	66.7%	66.7%	66.7%	66.7%
<i>Projected population receiving MAT</i>																
[2]	Population receiving MAT, low case	1,011	1,798	2,809	4,045	4,045	4,045	3,895	3,745	3,595	3,445	3,296	3,146	2,996	2,846	2,696
[3]	Population receiving MAT, base case	1,011	1,798	2,809	4,045	4,045	4,045	4,045	4,045	4,045	4,045	4,045	4,045	4,045	4,045	4,045
[4]	Population receiving MAT, high case	1,011	1,798	2,809	4,045	4,045	4,045	4,194	4,344	4,494	4,644	4,794	4,943	5,093	5,243	5,393
<i>Estimated cost of MAT</i>																
<i>2019\$ [A]</i>																
[5]	Buprenorphine \$122 / week	\$6,675	\$7,011	\$7,350	\$7,705	\$8,062	\$8,421	\$8,795	\$9,186	\$9,595	\$10,040	\$10,506	\$10,993	\$11,504	\$12,037	\$12,596
[6]	Methadone \$134 / week	\$7,314	\$7,681	\$8,053	\$8,442	\$8,833	\$9,226	\$9,637	\$10,065	\$10,513	\$11,000	\$11,511	\$12,045	\$12,604	\$13,189	\$13,801
[7]	Naltrexone (VIVITROL®) \$1,251 / month	\$15,766	\$16,558	\$17,359	\$18,198	\$19,042	\$19,889	\$20,773	\$21,697	\$22,662	\$11,620	\$11,429	\$10,883	\$11,388	\$11,797	\$11,110
[8]	Average annual cost of MAT	\$7,935	\$8,416	\$8,909	\$9,430	\$9,962	\$10,503	\$10,971	\$11,458	\$11,968	\$10,709	\$11,097	\$11,450	\$11,981	\$12,519	\$12,915
<i>Allocation of MAT</i>																
<i>% of MAT [B]</i>																
[9]	Buprenorphine 35.0%	35.0%	36.0%	37.0%	38.0%	39.0%	40.0%	40.0%	40.0%	40.0%	40.0%	40.0%	40.0%	40.0%	40.0%	40.0%
[10]	Methadone 55.0%	55.0%	53.0%	51.0%	49.0%	47.0%	45.0%	45.0%	45.0%	45.0%	45.0%	45.0%	45.0%	45.0%	45.0%	45.0%
[11]	Naltrexone (VIVITROL®) 10.0%	10.0%	11.0%	12.0%	13.0%	14.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%
<i>Total cost of MAT</i>																
<i>2020-2034 [C]</i>																
[12]	Low case (\$000s)	\$513,592	\$8,024	\$15,129	\$25,023	\$38,140	\$40,291	\$42,482	\$42,727	\$42,911	\$43,026	\$36,897	\$36,570	\$36,019	\$35,896	\$34,824
[13]	Base case (\$000s)	\$594,044	\$8,024	\$15,129	\$25,023	\$38,140	\$40,291	\$42,482	\$44,371	\$46,344	\$48,405	\$43,314	\$44,881	\$46,310	\$48,459	\$50,636
[14]	High case (\$000s)	\$674,497	\$8,024	\$15,129	\$25,023	\$38,140	\$40,291	\$42,482	\$46,014	\$49,777	\$53,783	\$49,730	\$53,192	\$56,602	\$61,023	\$65,639

Sources and Notes:

See Table I for actual and projected inflation rates used.

[A]: U.S. DOD, Office of the Secretary. 32 CFR Part 199. TRICARE; Mental Health and Substance Use Disorder Treatment. Federal Register, Vol. 81, No. 171, 61068-61098. Adjusted for prescription drug price inflation.

[B]: OhioMHAS estimates that the breakdown of MAT received by clients in Ohio's opioid-treatment programs (OTPs) is 74.2% methadone, 21.5% buprenorphine, and 4.3% naltrexone. This estimate is adjusted to reflect buprenorphine and naltrexone provided via non-OTP treatment facilities, based on data from the National Survey of Substance Abuse Treatment Services, 2017.

[C]=Σ(Year 1 to Year 15).

[1]: Projects that the prevalence of MAT among individuals receiving treatment will double by Year 4 and remain constant thereafter.

[2]=[1]*Table C.1[1].

[3]=[1]*Table C.1[2].

[4]=[1]*Table C.1[3].

[5]-[7]: Annual cost of treatment based on [B] and projected prescription drug price inflation. Naltrexone price drops in 2029 when the drug goes off-patent based on generic pricing trends reported by IMS.

[8]=[5]*[9]+[6]*[10]+[7]*[11].

[9]-[11]: Projects that buprenorphine and naltrexone allocation will increase gradually through Year 6 as the # of PCPs providing MAT increases.

[12]=([2]*[8])/10^3.

[13]=([3]*[8])/10^3.

[14]=([4]*[8])/10^3.

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Table S.2
Estimated Cost of MAT, Summit County

		Year 1 2020	Year 2 2021	Year 3 2022	Year 4 2023	Year 5 2024	Year 6 2025	Year 7 2026	Year 8 2027	Year 9 2028	Year 10 2029	Year 11 2030	Year 12 2031	Year 13 2032	Year 14 2033	Year 15 2034
[1]	MAT % of population receiving treatment	33.3%	44.4%	55.6%	66.7%	66.7%	66.7%	66.7%	66.7%	66.7%	66.7%	66.7%	66.7%	66.7%	66.7%	66.7%
<i>Projected population receiving MAT</i>																
[2]	Population receiving MAT, low case	438	779	1,218	1,754	1,754	1,754	1,689	1,624	1,559	1,494	1,429	1,364	1,299	1,234	1,169
[3]	Population receiving MAT, base case	438	779	1,218	1,754	1,754	1,754	1,754	1,754	1,754	1,754	1,754	1,754	1,754	1,754	1,754
[4]	Population receiving MAT, high case	438	779	1,218	1,754	1,754	1,754	1,818	1,883	1,948	2,013	2,078	2,143	2,208	2,273	2,338
<i>Estimated cost of MAT</i>																
	<i>2019\$ [A]</i>															
[5]	Buprenorphine	\$122 / week	\$6,675	\$7,011	\$7,350	\$7,705	\$8,062	\$8,421	\$8,795	\$9,186	\$9,595	\$10,040	\$10,506	\$10,993	\$11,504	\$12,037
[6]	Methadone	\$134 / week	\$7,314	\$7,681	\$8,053	\$8,442	\$8,833	\$9,226	\$9,637	\$10,065	\$10,513	\$11,000	\$11,511	\$12,045	\$12,604	\$13,189
[7]	Naltrexone (VIVITROL®)	\$1,251 / month	\$15,766	\$16,558	\$17,359	\$18,198	\$19,042	\$19,889	\$20,773	\$21,697	\$22,662	\$11,620	\$11,429	\$10,883	\$11,388	\$11,797
[8]	Average annual cost of MAT		\$7,935	\$8,416	\$8,909	\$9,430	\$9,962	\$10,503	\$10,971	\$11,458	\$11,968	\$10,709	\$11,097	\$11,450	\$11,981	\$12,519
<i>Allocation of MAT</i>																
	<i>% of MAT [B]</i>															
[9]	Buprenorphine	35.0%	35.0%	36.0%	37.0%	38.0%	39.0%	40.0%	40.0%	40.0%	40.0%	40.0%	40.0%	40.0%	40.0%	40.0%
[10]	Methadone	55.0%	55.0%	53.0%	51.0%	49.0%	47.0%	45.0%	45.0%	45.0%	45.0%	45.0%	45.0%	45.0%	45.0%	45.0%
[11]	Naltrexone (VIVITROL®)	10.0%	10.0%	11.0%	12.0%	13.0%	14.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%
<i>Total cost of MAT</i>																
	<i>2020-2034 [C]</i>															
[12]	Low case (\$000s)	\$222,667	\$3,479	\$6,559	\$10,849	\$16,535	\$17,468	\$18,418	\$18,524	\$18,604	\$18,654	\$15,997	\$15,855	\$15,616	\$15,563	\$15,448
[13]	Base case (\$000s)	\$257,547	\$3,479	\$6,559	\$10,849	\$16,535	\$17,468	\$18,418	\$19,237	\$20,092	\$20,986	\$18,779	\$19,458	\$20,078	\$21,009	\$21,953
[14]	High case (\$000s)	\$292,427	\$3,479	\$6,559	\$10,849	\$16,535	\$17,468	\$18,418	\$19,949	\$21,581	\$23,318	\$21,561	\$23,061	\$24,540	\$26,456	\$28,458

Sources and Notes:

See Table I for actual and projected inflation rates used.

[A]: U.S. DOD, Office of the Secretary. 32 CFR Part 199. TRICARE; Mental Health and Substance Use Disorder Treatment. Federal Register, Vol. 81, No. 171, 61068-61098. Adjusted for prescription drug price inflation.

[B]: OhioMHAS estimates that the breakdown of MAT received by clients in Ohio's opioid-treatment programs (OTPs) is 74.2% methadone, 21.5% buprenorphine, and 4.3% naltrexone. This estimate is adjusted to reflect buprenorphine and naltrexone provided via non-OTP treatment facilities, based on data from the National Survey of Substance Abuse Treatment Services, 2017.

[C]=Σ(Year 1 to Year 15).

[1]: Projects that the prevalence of MAT among individuals receiving treatment will double by Year 4 and remain constant thereafter.

[2]=[1]*Table S.1[1].

[3]=[1]*Table S.1[2].

[4]=[1]*Table S.1[3].

[5]-[7]: Annual cost of treatment based on [B] and projected prescription drug price inflation. Naltrexone price drops in 2029 when the drug goes off-patent based on generic pricing trends reported by IMS.

[8]=[5]*[9]+[6]*[10]+[7]*[11].

[9]-[11]: Projects that buprenorphine and naltrexone allocation will increase gradually through Year 6 as the # of PCPs providing MAT increases.

[12]=([2]*[8])/10^3.

[13]=([3]*[8])/10^3.

[14]=([4]*[8])/10^3.

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Table C.3

Estimated Cost of Recruiting PCPS to Provide MAT, Cuyahoga County

			Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15
			2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
<i>Recruitment staffing requirements</i>			<i>2019\$ [A]</i>														
[1]	FTEs to recruit PCPs to provide MAT	4															
[2]	FTE salary estimate	\$66,000															
[3]	Salary cost (\$000s)	\$264	\$273	\$283	\$293	\$302	\$312	\$321	\$331	\$341	\$351	\$362	\$373	\$384	\$396	\$408	\$421
<i>Labor Cost</i>																	
<i>Estimated employment cost</i>			<i>Multiplier [B]</i>														
[4]	FTE employment cost, base case (\$000s)	1.75x	\$478	\$495	\$512	\$529	\$545	\$562	\$579	\$597	\$615	\$634	\$653	\$673	\$693	\$714	\$736
<i>Total cost of recruitment</i>			<i>2020-2034 [C]</i>														
[5]	Base case (\$000s)	\$9,014	\$478	\$495	\$512	\$529	\$545	\$562	\$579	\$597	\$615	\$634	\$653	\$673	\$693	\$714	\$736

Sources and Notes:

See Table I for actual and projected inflation rates used.

[B]: Multiplier intended to capture labor costs beyond salary, such as fringe benefits and office costs.

[C]=Σ(Year 1 to Year 15).

[2]: Salary estimated based on Cuyahoga County salary data for comparable employee types. CUYAH_002426286.

[3]: [3A]=([1]*[2])/10^3. Year 1 onwards grown at projected employment cost inflation.

[4]=[3]*[B].

[5]=[4].

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Table S.3

Estimated Cost of Recruiting PCPS to Provide MAT, Summit County

		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15
		2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
	<i>Recruitment staffing requirements</i>	<i>2019\$ [A]</i>														
[1]	FTEs to recruit PCPs to provide MAT	2														
[2]	FTE salary estimate	\$66,000														
[3]	Salary cost (\$000s)	\$132	\$137	\$142	\$146	\$151	\$156	\$161	\$165	\$170	\$176	\$181	\$187	\$192	\$198	\$204
		<i>Labor Cost</i>														
	<i>Estimated employment cost</i>	<i>Multiplier [B]</i>														
[4]	FTE employment cost, base case (\$000s)	1.75x	\$239	\$248	\$256	\$264	\$273	\$281	\$289	\$298	\$307	\$317	\$326	\$336	\$347	\$357
	<i>Total cost of recruitment</i>	<i>2020-2034 [C]</i>														
[5]	Base case (\$000s)	\$4,507	\$239	\$248	\$256	\$264	\$273	\$281	\$289	\$298	\$307	\$317	\$326	\$336	\$347	\$357

Sources and Notes:

See Table I for actual and projected inflation rates used.

[B]: Multiplier intended to capture labor costs beyond salary, such as fringe benefits and office costs.

[C]=Σ(Year 1 to Year 15).

[2]=Table C.3[2].

[3]: [3A]=([1]*[2])/10^3. Year 1 onwards grown at projected employment cost inflation.

[4]=[3]*[B].

[5]=[4].

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Table C.4

Estimated Cost of Connecting Individuals to Services, Cuyahoga County

		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15
		2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
<i>Staff 24-7 referral hotline</i>		<i>2019\$ [A]</i>														
[1]	Operators required for 24-7 hotline	8														
[2]	FTE salary estimate	\$35,500														
[3]	Salary cost (\$000s)	\$284	\$294	\$304	\$315	\$325	\$335	\$345	\$356	\$367	\$378	\$389	\$401	\$414	\$426	\$439
<i>Staff emergency departments</i>		<i>2019\$ [B]</i>														
[4]	Total social workers required	22														
[5]	FTE salary estimate	\$62,000														
[6]	Salary cost (\$000s)	\$1,364	\$1,412	\$1,462	\$1,511	\$1,560	\$1,609	\$1,659	\$1,709	\$1,761	\$1,815	\$1,870	\$1,927	\$1,986	\$2,047	\$2,109
[7]	Estimated opioid-related visits	8,908														
[8]	Recovery coach utilization %	20.0%														
[9]	Visits utilizing recovery coach	1,782														
[10]	Recovery coach hours per client, avg	18														
[11]	Recovery coach hourly rate	\$15.00														
[12]	Salary cost (\$000)	\$481	\$498	\$516	\$533	\$550	\$568	\$585	\$603	\$621	\$640	\$660	\$680	\$700	\$722	\$744
<i>Estimated employment cost</i>		<i>Labor Cost Multiplier [C]</i>														
[13]	FTE employment cost, base case (\$000s)	1.75x	\$3,858	\$3,994	\$4,128	\$4,262	\$4,396	\$4,530	\$4,669	\$4,811	\$4,958	\$5,109	\$5,265	\$5,425	\$5,591	\$5,762
<i>Individuals receiving transportation assistance</i>																
[14]	Individuals transported to treatment, low case	758	1,011	1,264	1,517	1,517	1,517	1,461	1,404	1,348	1,292	1,236	1,180	1,123	1,067	1,011
[15]	Individuals transported to treatment, base case	758	1,011	1,264	1,517	1,517	1,517	1,517	1,517	1,517	1,517	1,517	1,517	1,517	1,517	1,517
[16]	Individuals transported to treatment, high case	758	1,011	1,264	1,517	1,517	1,517	1,573	1,629	1,685	1,741	1,798	1,854	1,910	1,966	2,022
<i>Estimated transportation cost</i>		<i>2019\$ [D]</i>														
[17]	Round trip fare, avg	\$21.00														
[18]	# of round trips per individual per year, avg	36														
[19]	Annual transportation cost per individual, avg	\$756	\$776	\$796	\$816	\$836	\$856	\$876	\$896	\$917	\$938	\$960	\$983	\$1,007	\$1,031	\$1,056
[20]	Cost of transportation, low case (\$000s)	\$588	\$805	\$1,031	\$1,268	\$1,299	\$1,328	\$1,309	\$1,287	\$1,264	\$1,241	\$1,215	\$1,188	\$1,158	\$1,127	\$1,093
[21]	Cost of transportation, base case (\$000s)	\$588	\$805	\$1,031	\$1,268	\$1,299	\$1,328	\$1,359	\$1,390	\$1,422	\$1,456	\$1,491	\$1,527	\$1,564	\$1,601	\$1,640
[22]	Cost of transportation, high case (\$000s)	\$588	\$805	\$1,031	\$1,268	\$1,299	\$1,328	\$1,409	\$1,493	\$1,580	\$1,672	\$1,767	\$1,866	\$1,969	\$2,076	\$2,186
<i>Web-based referral system</i>		<i>2019\$ [E]</i>														
[23]	Cost of web-based system (000s)	\$112	\$115	\$118	\$121	\$124	\$127	\$130	\$133	\$136	\$139	\$143	\$146	\$150	\$153	\$157
<i>Total cost of connecting individuals</i>		<i>2020-2034 [F]</i>														
[24]	Low case (\$000s)	\$91,951	\$4,561	\$4,917	\$5,280	\$5,654	\$5,822	\$5,989	\$6,110	\$6,234	\$6,361	\$6,492	\$6,626	\$6,763	\$6,902	\$7,045
[25]	Base case (\$000s)	\$94,520	\$4,561	\$4,917	\$5,280	\$5,654	\$5,822	\$5,989	\$6,161	\$6,337	\$6,519	\$6,708	\$6,902	\$7,102	\$7,308	\$7,520
[26]	High case (\$000s)	\$97,089	\$4,561	\$4,917	\$5,280	\$5,654	\$5,822	\$5,989	\$6,211	\$6,440	\$6,677	\$6,924	\$7,178	\$7,442	\$7,713	\$8,284

Table C.4

Estimated Cost of Connecting Individuals to Services, Cuyahoga County

Sources and Notes:

See Table I for actual and projected inflation rates used.

[C]: Multiplier intended to capture labor costs beyond salary, such as fringe benefits and office costs.

[F]= Σ (Year 1 to Year 15).

[1]=(24 hours*365 days)/(2,080 work hours per operator)*2 operators staffed at all times (rounded).

[2]: Salary estimated based on Cuyahoga County salary data for comparable employee types. CUYAH_002426286.

[3]: [3A]=([1]*[2])/10³. Year 1 onwards grown at projected employment cost inflation.

[4]: Assumes on average of one social worker required per hospital. The Ohio Development Services Agency reports that there are 22 registered hospital in Cuyahoga County.

[5]: Salary estimated based on average salary of medical social workers in Cleveland reported by Salary.com.

[6]: [6B]=([4]*[5])/10³. Year 1 onwards grown at projected employment cost inflation.

[7]=524 opioid overdose deaths in Cuyahoga County in 2017 * 17 emergency room visits per overdose death. National Center for Health Statistics; Healthcare Cost and Utilization Project (HCUP) Fast Stats - Opioid-Related Hospital Use (<https://www.hcup-us.ahrq.gov/faststats/OpioidUseServlet>).

[8]=Table C.0[4].

[9]=[7]*[8].

[10]: Assumes that recovery coaches will work on average 18 hours per client.

[11]: Hourly rate based on hourly rate ranges for recovery coaches reported by Glassdoor.

[12]=([9]*[10]*[11])/10³.

[13]=([3]+[6]+[12])*[C].

[14]-[16]: 25% of Table C.1[1]-[3].

[17]: Based on reported Uber fare rates in Cleveland. Estimated as the average of the minimum fare for a round trip, the fare for a 14 mile round trip, and the fare for a 30 mile round trip. Distances based on average and median distance traveled to OTPs reported in Rosenblum, Cleland, Kayman et al. (2011).

[19]: [19D]=[17]*[18]. Year 1 onwards grown at projected inflation.

[20]=([14]*[19])/10³.

[21]=([15]*[19])/10³.

[22]=([16]*[19])/10³.

[23]: [23E] based on cost of findlocaltreatment.com quoted for Franklin County. Year 1 onwards grown at projected inflation.

[24]=[13]+[20]+[23].

[25]=[13]+[21]+[23].

[26]=[13]+[22]+[23].

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Table S.4

Estimated Cost of Connecting Individuals to Services, Summit County

		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15
		2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
<i>Staff 24-7 referral hotline</i>		<i>2019\$ [A]</i>														
[1]	Operators required for 24-7 hotline	8														
[2]	FTE salary estimate	\$35,500														
[3]	Salary cost (\$000s)	\$284	\$294	\$304	\$315	\$325	\$335	\$345	\$356	\$367	\$378	\$389	\$401	\$414	\$426	\$439
<i>Staff emergency departments</i>		<i>2019\$ [B]</i>														
[4]	Total social workers required	10														
[5]	FTE salary estimate	\$59,500														
[6]	Salary cost (\$000s)	\$595	\$616	\$638	\$659	\$681	\$702	\$723	\$746	\$768	\$792	\$816	\$841	\$866	\$893	\$920
[7]	Estimated opioid-related visits	3,230														
[8]	Recovery coach utilization %	20.0%														
[9]	Visits utilizing recovery coach	646														
[10]	Recovery coach hours per client, avg	18														
[11]	Recovery coach hourly rate	\$15.00														
[12]	Salary cost (\$000)	\$174	\$181	\$187	\$193	\$200	\$206	\$212	\$219	\$225	\$232	\$239	\$246	\$254	\$262	\$278
<i>Estimated employment cost</i>		<i>Labor Cost Multiplier [C]</i>														
[13]	FTE employment cost, base case (\$000s)	1.75x	\$1,909	\$1,976	\$2,043	\$2,109	\$2,175	\$2,242	\$2,310	\$2,380	\$2,453	\$2,528	\$2,605	\$2,684	\$2,766	\$2,851
<i>Individuals receiving transportation assistance</i>																
[14]	Individuals transported to treatment, low case		329	438	548	658	658	658	633	609	585	560	536	511	487	438
[15]	Individuals transported to treatment, base case		329	438	548	658	658	658	658	658	658	658	658	658	658	658
[16]	Individuals transported to treatment, high case		329	438	548	658	658	658	682	706	731	755	779	804	828	877
<i>Estimated transportation cost</i>		<i>2019\$ [D]</i>														
[17]	Round trip fare, avg	\$22.00														
[18]	# of round trips per individual per year, avg	36														
[19]	Annual transportation cost per individual, avg	\$792	\$813	\$834	\$855	\$876	\$897	\$918	\$939	\$960	\$982	\$1,006	\$1,030	\$1,055	\$1,080	\$1,133
[20]	Cost of transportation, low case (\$000s)		\$267	\$365	\$468	\$576	\$590	\$603	\$594	\$585	\$574	\$563	\$552	\$539	\$526	\$496
[21]	Cost of transportation, base case (\$000s)		\$267	\$365	\$468	\$576	\$590	\$603	\$617	\$631	\$646	\$661	\$677	\$694	\$710	\$745
[22]	Cost of transportation, high case (\$000s)		\$267	\$365	\$468	\$576	\$590	\$603	\$640	\$678	\$718	\$759	\$803	\$848	\$894	\$993
<i>Web-based referral system</i>		<i>2019\$ [E]</i>														
[23]	Cost of web-based system (000s)	\$112	\$115	\$118	\$121	\$124	\$127	\$130	\$133	\$136	\$139	\$143	\$146	\$150	\$153	\$161
<i>Total cost of connecting individuals</i>		<i>2020-2034 [F]</i>														
[24]	Low case (\$000s)	\$45,835	\$2,291	\$2,460	\$2,632	\$2,809	\$2,892	\$2,975	\$3,037	\$3,101	\$3,167	\$3,234	\$3,303	\$3,374	\$3,446	\$3,519
[25]	Base case (\$000s)	\$47,002	\$2,291	\$2,460	\$2,632	\$2,809	\$2,892	\$2,975	\$3,060	\$3,148	\$3,238	\$3,332	\$3,428	\$3,528	\$3,630	\$3,735
[26]	High case (\$000s)	\$48,169	\$2,291	\$2,460	\$2,632	\$2,809	\$2,892	\$2,975	\$3,083	\$3,195	\$3,310	\$3,430	\$3,554	\$3,682	\$3,814	\$4,091

Table S.4

Estimated Cost of Connecting Individuals to Services, Summit County

Sources and Notes:

See Table I for actual and projected inflation rates used.

[C]: Multiplier intended to capture labor costs beyond salary, such as fringe benefits and office costs.

[F]= Σ (Year 1 to Year 15).

[1]=(24 hours*365 days)/(2,080 work hours per operator)*2 operators staffed at all times (rounded).

[2]=Table C.4[2].

[3]: [3A]=([1]*[2]/10³. Year 1 onwards grown at projected employment cost inflation.

[4]: Assumes on average of one new social worker per hospital. The Ohio Development Services Agency reports that there are 10 registered hospital in Summit County.

[5]: Salary estimated based on average salary of medical social workers in Akron reported by Salary.com.

[6]: [6B]=([4]*[5]/10³. Year 1 onwards grown at projected employment cost inflation.

[7]=190 opioid overdose deaths in Summit County in 2017 * 17 emergency room visits per overdose death. National Center for Health Statistics; Healthcare Cost and Utilization Project (HCUP) Fast Stats - Opioid-Related Hospital Use (<https://www.hcup-us.ahrq.gov/faststats/OpioidUseServlet>).

[8]: Assumes that 1 in 4 opioid-related emergency department visitors will accept assistance from a recovery coach.

[9]=[7]*[8].

[10]: Assumes that recovery coaches will work on average 18 hours with each client.

[11]: Hourly rate based on hourly rate ranges for recovery coaches reported by Glassdoor.

[12]=([9]*[10]*[11])/10³.

[13]=([3]+[6]+[12])*[C].

[14]-[16]: 25% of Table S.1[1]-[3].

[17]: Based on reported Uber fares. Estimated as the average of the minimum fare for a round trip, the fare for a 14 mile round trip, and the fare for a 30 mile round trip. Distances based on average and median distance traveled to OTP reported in Rosenblum, Cleland, Kayman et al. (2011).

[19]: [19D]=[17]*[18]. Year 1 onwards grown at projected inflation.

[20]=([14]*[19])/10³.

[21]=([15]*[19])/10³.

[22]=([16]*[19])/10³.

[23]: [23E] based on cost of findlocaltreatment.com quoted for Franklin County. Year 1 onwards grown at projected inflation.

[24]=[13]+[20]+[23].

[25]=[13]+[21]+[23].

[26]=[13]+[22]+[23].

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Table C.5

Estimated Cost of Special Populations: Child Welfare, Cuyahoga County

		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15
		2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
	<i>Child welfare agency staffing</i>	<i>2019\$ [A]</i>														
[1]	Investigation, active cases	1,911														
[2]	Ongoing, active cases	2,303														
[3]	Adoption and other, active cases	557														
[4]	Subtotal, active cases	4,771														
[5]	Social worker, investigation caseload	12														
[6]	Social worker, ongoing caseload	10														
[7]	Social worker, perm. support caseload	20														
[8]	Family advocate, ongoing caseload	10														
[9]	Opioid-related %	15.7%														
[10]	Required # of social workers	84														
[11]	FTE salary estimate	\$52,500														
[12]	Salary cost (\$000s)	\$4,410	\$4,566	\$4,728	\$4,886	\$5,045	\$5,204	\$5,362	\$5,526	\$5,695	\$5,868	\$6,047	\$6,232	\$6,422	\$6,618	\$6,820
[13]	Required # of family advocates	36														
[14]	FTE salary estimate	\$38,500														
[15]	Salary cost (\$000s)	\$1,386	\$1,435	\$1,486	\$1,536	\$1,586	\$1,635	\$1,685	\$1,737	\$1,790	\$1,844	\$1,901	\$1,959	\$2,018	\$2,080	\$2,143
[16]	Trauma counselor for CFS staff	1														
[17]	FTE salary estimate	\$61,500														
[18]	Salary cost (\$000s)	\$62	\$64	\$66	\$68	\$70	\$73	\$75	\$77	\$79	\$82	\$84	\$87	\$90	\$92	\$95
[19]	Staff to recruit foster families	3														
[20]	FTE salary estimate	\$52,500														
[21]	Salary cost (\$000s)	\$158	\$163	\$169	\$175	\$180	\$186	\$192	\$197	\$203	\$210	\$216	\$223	\$229	\$236	\$244
	<i>Labor Cost</i>															
	<i>Estimated employment cost</i>	<i>Multiplier [B]</i>														
[22]	FTE employment cost, base case (\$000s)	1.75x	\$10,899	\$11,285	\$11,663	\$12,041	\$12,421	\$12,800	\$13,190	\$13,592	\$14,007	\$14,434	\$14,874	\$15,328	\$15,796	\$16,278
	<i>Cost of out-of-home placements</i>	<i>2019\$ [C]</i>														
[23]	Children placed in foster/instl care, avg #	1,454														
[24]	Opioid-related % of removals	15.7%														
[25]	Est. cost per placement, avg	\$17,492														
[26]	Estimated placement cost (\$000s)	\$3,999	\$4,103	\$4,210	\$4,315	\$4,423	\$4,529	\$4,633	\$4,740	\$4,849	\$4,960	\$5,079	\$5,201	\$5,326	\$5,454	\$5,585
	<i>Child care for at-risk families</i>	<i>2019\$ [D]</i>														
[27]	Minors receiving in-home services, avg #	2,775														
[28]	Opioid-related %	15.7%														
[29]	% receiving day care services	33.0%														
[30]	Annual childcare cost	\$9,541														
[31]	Childcare cost (\$000)	\$1,373	\$1,408	\$1,445	\$1,481	\$1,518	\$1,555	\$1,590	\$1,627	\$1,664	\$1,703	\$1,743	\$1,785	\$1,828	\$1,872	\$1,917
	<i>Total cost for special population</i>	<i>2020-2034 [E]</i>														
[32]	Base case (\$000s)	\$303,609	\$16,411	\$16,940	\$17,459	\$17,983	\$18,504	\$19,023	\$19,557	\$20,105	\$20,670	\$21,257	\$21,861	\$22,482	\$23,122	\$23,779

Table C.5

Estimated Cost of Special Populations: Child Welfare, Cuyahoga County

Sources and Notes:

See Table I for actual and projected inflation rates used.

[B]: Multiplier intended to capture labor costs beyond salary, such as fringe benefits and office costs.

[E]=Σ(Year 1 to Year 15).

[1]-[4], [23], [27]: Cuyahoga County Division of Children and Family Services, 2018 Statistical Report: January - September 2018 at pp. 5-7.

[5]-[7]: Deposition of Cynthia G. Weiskittel, November 13, 2018, at 88:19-22; 91:15-16; and 92:8-13.

[8]: Assumed to be approximately equal to [6].

[9], [28]: Assumed equal to [24].

[10]=[9]*([1]/[5]+[2]/[6]+([2]+[3])/[7]) (rounded).

[11], [14], [17], [20]: Salary estimated based on Cuyahoga County salary data for comparable employee types. CUYAH_002426286.

[12]=([10]*[11])/10³. Year 1 onwards grown at projected employment cost inflation.

[13]=[9]*([2]/[8]) (rounded).

[15]=([13]*[14])/10³. Year 1 onwards grown at projected employment cost inflation.

[18]=([16]*[17])/10³. Year 1 onwards grown at projected employment cost inflation.

[21]=([19]*[20])/10³. Year 1 onwards grown at projected employment cost inflation.

[22]=([12]+[15]+[18]+[21])*[B].

[24]: 2017 opioid-related % of removals for Cuyahoga Children and Family Services, see Cutler Report, Table III.6[1].

[25]: Estimated based on boarding and care costs and placements for foster care and institutional housing in 2017.

[26]: [26C]=([23]*[24]*[25])/10³. Year 1 onwards grown at projected inflation.

[29]: % of minor population (<18) that is under 6-years old. National Center for Health Statistics, Bridged-Race Population Estimates, Cuyahoga County.

[30]=Table C.1[7].

[31]: [31D]=([27]*[28]*[29]*[30])/10³. Year 1 onwards grown at projected inflation.

[32]=[22]+[26]+[31].

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Table S.5

Estimated Cost of Special Populations: Child Welfare, Summit County

		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15
		2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
	<i>Child welfare agency staffing</i>	<i>2019\$ [A]</i>														
[1]	Investigation, active cases	836														
[2]	Ongoing, active cases	1,007														
[3]	Adoption and other, active cases	244														
[4]	Subtotal, active cases	2,087														
[5]	Social worker, investigation caseload	12														
[6]	Social worker, ongoing caseload	10														
[7]	Social worker, perm. support caseload	20														
[8]	Family advocate, ongoing caseload	10														
[9]	Opioid-related %	27.0%														
[10]	Required # of social workers	63														
[11]	FTE salary estimate	\$52,500														
[12]	Salary cost (\$000s)	\$3,308	\$3,425	\$3,546	\$3,665	\$3,784	\$3,903	\$4,022	\$4,144	\$4,271	\$4,401	\$4,535	\$4,674	\$4,816	\$4,963	\$5,115
[13]	Required # of family advocates	27														
[14]	FTE salary estimate	\$38,500														
[15]	Salary cost (\$000s)	\$1,040	\$1,076	\$1,114	\$1,152	\$1,189	\$1,227	\$1,264	\$1,303	\$1,342	\$1,383	\$1,425	\$1,469	\$1,514	\$1,560	\$1,607
[16]	Trauma counselor for CFS staff	1														
[17]	FTE salary estimate	\$61,500														
[18]	Salary cost (\$000s)	\$62	\$64	\$66	\$68	\$70	\$73	\$75	\$77	\$79	\$82	\$84	\$87	\$90	\$92	\$95
[19]	Staff to recruit foster families	2														
[20]	FTE salary estimate	\$52,500														
[21]	Salary cost (\$000s)	\$105	\$109	\$113	\$116	\$120	\$124	\$128	\$132	\$136	\$140	\$144	\$148	\$153	\$158	\$162
	<i>Labor Cost</i>															
	<i>Estimated employment cost</i>	<i>Multiplier [B]</i>														
[22]	FTE employment cost, base case (\$000s)	1.75x	\$8,178	\$8,468	\$8,751	\$9,036	\$9,320	\$9,604	\$9,897	\$10,199	\$10,510	\$10,831	\$11,161	\$11,502	\$11,853	\$12,214
	<i>Cost of out-of-home placements</i>	<i>2019\$ [C]</i>														
[23]	Children placed in foster/instl care, avg #	636														
[24]	Opioid-related % of removals	27.0%														
[25]	Est. cost per placement, avg	\$17,492														
[26]	Estimated placement cost (\$000s)	\$3,006	\$3,084	\$3,164	\$3,244	\$3,325	\$3,404	\$3,483	\$3,563	\$3,645	\$3,729	\$3,818	\$3,910	\$4,004	\$4,100	\$4,198
	<i>Child care for at-risk families</i>	<i>2019\$ [D]</i>														
[27]	Minors receiving in-home services, avg #	1,213														
[28]	Opioid-related %	27.0%														
[29]	% receiving day care services	32.1%														
[30]	Annual childcare cost	\$9,541														
[31]	Childcare cost (\$000)	\$1,004	\$1,030	\$1,057	\$1,083	\$1,110	\$1,137	\$1,163	\$1,190	\$1,217	\$1,245	\$1,275	\$1,306	\$1,337	\$1,369	\$1,402
	<i>Total cost for special population</i>	<i>2020-2034 [E]</i>														
[32]	Base case (\$000s)	\$227,437	\$12,293	\$12,689	\$13,078	\$13,470	\$13,861	\$14,250	\$14,650	\$15,061	\$15,484	\$15,924	\$16,377	\$16,842	\$17,321	\$17,814

Table S.5

Estimated Cost of Special Populations: Child Welfare, Summit County

Sources and Notes:

See Table I for actual and projected inflation rates used.

[B]: Multiplier intended to capture labor costs beyond salary, such as fringe benefits and office costs.

[E]=Σ(Year 1 to Year 15).

[1]-[4], [23], [27]: Based on figure in Table C.5, adjusted downward based on the difference in the size of the minor population in Summit County relative to Cuyahoga County.

[5]-[7]: Assumed equal to caseload figures in Table C.5.

[8]: Assumed to be approximately equal to [6].

[9], [28]: Assumed equal to [24].

[10]=[9]*([1]/[5]+[2]/[6]+([2]+[3])/[7]) (rounded).

[11], [14], [17], [20]: Assumed equal to salary estimate figures in Table C.5.

[12]=([10]*[11])/10³. Year 1 onwards grown at projected employment cost inflation.

[13]=[9]*([2]/[8]) (rounded).

[15]=([13]*[14])/10³. Year 1 onwards grown at projected employment cost inflation.

[18]=([16]*[17])/10³. Year 1 onwards grown at projected employment cost inflation.

[21]=([19]*[20])/10³. Year 1 onwards grown at projected employment cost inflation.

[22]=([12]+[15]+[18]+[21])*[B].

[24]: 2017 opioid-related % of removals for Summit Children Services Board, see Cutler Report, Table III.6[2].

[25]=Table C.5[25].

[26]: [26C]=([23]*[24]*[25])/10³. Year 1 onwards grown at projected inflation.

[29]: % of minor population (<18) that is under 6-years old. National Center for Health Statistics, Bridged-Race Population Estimates, Summit County.

[30]=Table S.1[7].

[31]: [31D]=([27]*[28]*[29]*[30])/10³. Year 1 onwards grown at projected inflation.

[32]=[22]+[26]+[31].

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Table C.6

Estimated Cost of Special Populations: Pregnant Women, Cuyahoga County

		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	
		2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	
	Home visit program	2019[A]															
[1]	# of opioid-related NAS cases	137															
[2]	Pregnant women with OUD	183															
[3]	Cost per home visit family	\$7,467															
[4]	Cost of home visit program (\$000s)	\$1,366	\$1,429	\$1,495	\$1,561	\$1,630	\$1,699	\$1,768	\$1,839	\$1,914	\$1,992	\$2,076	\$2,164	\$2,256	\$2,351	\$2,451	\$2,555
	Total cost for special population	2020-2034 [B]															
[5]	Base case (\$000s)	\$29,180	\$1,429	\$1,495	\$1,561	\$1,630	\$1,699	\$1,768	\$1,839	\$1,914	\$1,992	\$2,076	\$2,164	\$2,256	\$2,351	\$2,451	\$2,555

Sources and Notes:

See Table I for actual and projected inflation rates used.

[B]=Σ(Year 1 to Year 15).

[1]: McGuire Public Nuisance Report, Appendix E.

[2]=[1]/75% (rounded). 75% based on Keyes Report at p. 25: "Withdrawal symptoms develop in an estimated 55-95% of opioid-exposed infants".

[3]: Based on average cost of Nurse-Family Partnership (NFP) program per family, as reported by HHS Administration for Children & Families.

[4]=([2]*[3])/10^3. Year 1 onwards grown at projected medical services inflation.

[5]=[4].

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Table S.6

Estimated Cost of Special Populations: Pregnant Women, Summit County

		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	
		2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	
	<i>Home visit program</i>	<i>2019[A]</i>															
[1]	# of opioid-related NAS cases	71															
[2]	Pregnant women with OUD	95															
[3]	Cost per home-visit family	<u>\$7,467</u>															
[4]	Cost of home visit program (\$000s)	\$709	\$742	\$776	\$810	\$846	\$882	\$918	\$955	\$994	\$1,034	\$1,078	\$1,123	\$1,171	\$1,221	\$1,272	\$1,326
	<i>Total cost for special population</i>	<i>2020-2034 [B]</i>															
[5]	Base case (\$000s)	\$15,148	\$742	\$776	\$810	\$846	\$882	\$918	\$955	\$994	\$1,034	\$1,078	\$1,123	\$1,171	\$1,221	\$1,272	\$1,326

Sources and Notes:

See Table I for actual and projected inflation rates used.

[B]=Σ(Year 1 to Year 15).

[1]: McGuire Public Nuisance Report, Appendix E.

[2]=[1]/75% (rounded). 75% based on Keyes Report at p. 25: "Withdrawal symptoms develop in an estimated 55-95% of opioid-exposed infants".

[3]: Based on average cost of Nurse-Family Partnership (NFP) program per family, as reported by HHS Administration for Children & Families.

[4]=([2]*[3])/10^3. Year 1 onwards grown at projected medical services inflation.

[5]=[4].

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Table C.7

Estimated Cost of Special Populations: Jails, Cuyahoga County

		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15
		2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
	<i>Comprehensive treatment & re-entry facility</i>	<i>2019\$ [A]</i>														
[1]	Average daily population	2,263														
[2]	% of inmates with OUD	25.0%														
[3]	% of OUD inmates housed in facility	66.7%														
[4]	Average daily population with OUD	377														
[5]	Estimated facility cost per bed per day	\$33.48														
[6]	Cost of facility (\$000s)	\$4,606	\$4,726	\$4,849	\$4,970	\$5,094	\$5,217	\$5,337	\$5,459	\$5,585	\$5,714	\$5,851	\$5,991	\$6,135	\$6,282	\$6,433
	<i>Connect inmates with OUD to resources</i>	<i>2019\$ [B]</i>														
[7]	Annual # of releases	27,381														
[8]	Annual # of releases, inmates with OUD	6,845														
[9]	Daily releases with OUD, avg	19														
[10]	Daily releases with OUD per social worker, avg	2														
[11]	Required social workers for OUD inmates	9														
[12]	FTE salary estimate	\$60,500														
[13]	Salary cost (\$000s)	\$545	\$564	\$584	\$603	\$623	\$642	\$662	\$682	\$703	\$725	\$747	\$769	\$793	\$817	\$842
	<i>Estimated employment cost</i>	<i>Labor Cost Multiplier [C]</i>														
[14]	FTE employment cost, base case (\$000s)	1.75x	\$987	\$1,022	\$1,056	\$1,090	\$1,124	\$1,159	\$1,194	\$1,230	\$1,268	\$1,307	\$1,346	\$1,388	\$1,430	\$1,474
	<i>Transitional housing for inmates with OUD</i>	<i>2019\$ [D]</i>														
[15]	Annual # of releases, inmates with OUD	6,845														
[16]	% receiving transitional housing	20.0%														
[17]	Annual # receiving housing	1,369														
[18]	Avg # of days in transitional housing	90														
[19]	Daily cost of transitional housing	\$47														
[20]	Housing cost (\$000s)	\$5,806	\$5,957	\$6,112	\$6,264	\$6,421	\$6,575	\$6,726	\$6,881	\$7,039	\$7,201	\$7,374	\$7,551	\$7,732	\$7,918	\$8,108
	<i>Specialty detox and treatment unit</i>	<i>2019\$ [E]</i>														
[21]	Annual cost of specialty detox unit (\$000s)	\$712	\$731	\$750	\$768	\$788	\$806	\$825	\$844	\$863	\$883	\$904	\$926	\$948	\$971	\$994
	<i>Total cost for special population</i>	<i>2020-2034 [F]</i>														
[22]	Base case (\$000s)	\$222,005	\$12,400	\$12,732	\$13,059	\$13,393	\$13,723	\$14,047	\$14,378	\$14,718	\$15,066	\$15,436	\$15,815	\$16,203	\$16,601	\$17,009

Table C.7

Estimated Cost of Special Populations: Jails, Cuyahoga County

Sources and Notes:

See Table I for actual and projected inflation rates used.

[C]: Multiplier intended to capture labor costs beyond salary, such as fringe benefits and office costs.

[F]=Σ(Year 1 to Year 15).

[1], [6]: Cuyahoga County Sheriff's Department, 2017 Annual Report at p. 6.

[2]: From 2016 to 2018, between 24.7% and 29.6% of Common Pleas Court defendants had OUD (CUYAH_003505168-169).

[3]: Assumes that 2/3 of inmates with OUD are placed in comprehensive treatment and re-entry facility.

[4]=[1]*[2]*[3].

[5]: Estimated based on reported costs for the 175-bed comprehensive program center at Euclid Jail (CUYAH_012341077).

[6]: [6A]=[4]*[5]*365/10^3. Year 1 onwards grown at projected inflation.

[8]=[7]*[2].

[9]=[8]/365 days.

[11]=[9]/[10].

[12]: Salary estimated based on Cuyahoga County salary data for comparable employee types. (CUYAH_002426286)

[13]=[11]*[12]/10^3. Year 1 onwards grown at employment cost inflation.

[14]=[13]*[C].

[15]=[8].

[17]=[15]*[16].

[18]: A 2017 data analysis prepared for the Ohio Development Services Agency and Ohio Mental Health and Addiction Services concluded that the optimal length of stay in transitional housing was 90 days.

[19]: Estimated based on 2019 fair market rents published by HUD and HUD research finding that transitional housing for individuals is ~211% of fair market rent for a 1-bedroom rental unit.

[20]: [20D]=[17]*[18]*[19]/10^3. Year 1 onwards grown at projected inflation.

[21]: Estimated based on the inflation-adjusted annual cost of the Louisville Metro Corrections detox unit program. Year 1 onward grown at projected inflation.

[22]=[6]+[14]+[20]+[21].

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Table S.7

Estimated Cost of Special Populations: Jails, Summit County

		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	
		2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	
	<i>Comprehensive treatment & re-entry facility</i>	<i>2019\$ [A]</i>															
[1]	Average daily population	647															
[2]	% of inmates with OUD	25.0%															
[3]	% of OUD inmates housed in facility	100.0%															
[4]	Average daily population with OUD	162															
[5]	Estimated facility cost per bed per day	\$33.48															
[6]	Cost of facility (\$000s)	\$1,976	\$2,028	\$2,080	\$2,132	\$2,186	\$2,238	\$2,290	\$2,342	\$2,396	\$2,451	\$2,510	\$2,570	\$2,632	\$2,695	\$2,760	\$2,826
	<i>Connect inmates with OUD to resources</i>	<i>2019\$ [B]</i>															
[7]	Annual # of releases	11,199															
[8]	Annual # of releases, inmates with OUD	2,800															
[9]	Daily releases with OUD, avg	8															
[10]	Daily releases with OUD per social worker, avg	2															
[11]	Required social workers for OUD inmates	4															
[12]	FTE salary estimate	\$60,500															
[13]	Salary cost (\$000s)	\$232	\$240	\$249	\$257	\$265	\$274	\$282	\$291	\$300	\$309	\$318	\$328	\$338	\$348	\$359	\$370
	<i>Estimated employment cost</i>	<i>Labor Cost Multiplier [C]</i>															
[14]	FTE employment cost, base case (\$000s)	1.75x	\$420	\$435	\$450	\$465	\$479	\$494	\$509	\$524	\$540	\$557	\$574	\$591	\$609	\$628	\$647
	<i>Transitional housing for inmates with OUD</i>	<i>2019\$ [D]</i>															
[15]	Annual # of releases, inmates with OUD	2,800															
[16]	% receiving transitional housing	20.0%															
[17]	Annual # receiving housing	560															
[18]	Avg # of days in transitional housing	90															
[19]	Daily cost of transitional housing	\$43															
[20]	Housing cost (\$000s)	\$2,182	\$2,239	\$2,297	\$2,354	\$2,413	\$2,471	\$2,528	\$2,586	\$2,646	\$2,706	\$2,771	\$2,838	\$2,906	\$2,976	\$3,047	\$3,120
	<i>Total cost for special population</i>	<i>2020-2034 [E]</i>															
[21]	Base case (\$000s)	\$83,960	\$4,687	\$4,813	\$4,937	\$5,063	\$5,188	\$5,311	\$5,437	\$5,566	\$5,698	\$5,838	\$5,982	\$6,129	\$6,280	\$6,435	\$6,594

Table S.7

Estimated Cost of Special Populations: Jails, Summit County

Sources and Notes:

See Table I for actual and projected inflation rates used.

[C]: Multiplier intended to capture labor costs beyond salary, such as fringe benefits and office costs.

[E]=Σ(Year 1 to Year 15).

[1], [6]: Summit County Sheriff's Office, 2017 Annual Report at p. 49.

[2]=Table C.7[2].

[3]: Assumes that all inmates with OUD are placed in a comprehensive treatment and re-entry facility.

[4]=[1]*[2]*[3].

[5]=Table C.7[5].

[6]: [6A]=([4]*[5]*365)/10³. Year 1 onwards grown at projected inflation.

[8]=[7]*[2].

[9]=[8]/365 days.

[11]=[9]/[10].

[12]=Table C.7[12].

[13]=([11]*[12])/10³. Year 1 onwards grown at employment cost inflation.

[14]=[13]*[C].

[15]=[8].

[17]=[15]*[16].

[18]: A 2017 data analysis prepared for the Ohio Development Services Agency and Ohio Mental Health and Addiction Services concluded that the optimal length of stay in transitional housing was 90 days.

[19]: Estimated based on 2019 fair market rents published by HUD and HUD research finding that transitional housing for individuals is ~211% of fair market rent for a 1-bedroom rental unit.

[20]: [20D]=([17]*[18]*[19])/10³. Year 1 onwards grown at projected inflation.

[21]=[6]+[14]+[20].

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APPENDIX D: HARM REDUCTION

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Table C.8

Estimated Cost of Naloxone, Cuyahoga County

		Year 1 2020	Year 2 2021	Year 3 2022	Year 4 2023	Year 5 2024	Year 6 2025	Year 7 2026	Year 8 2027	Year 9 2028	Year 10 2029	Year 11 2030	Year 12 2031	Year 13 2032	Year 14 2033	Year 15 2034
<i>Projected population requiring Narcan kits</i>																
[1]	Population requiring Narcan kits, low case	15,167	15,059	14,950	14,842	14,734	14,625	14,517	14,409	14,300	14,192	14,084	13,975	13,867	13,759	13,650
[2]	Population requiring Narcan kits, base case	15,167	15,167	15,167	15,167	15,167	15,167	15,167	15,167	15,167	15,167	15,167	15,167	15,167	15,167	15,167
[3]	Population requiring Narcan kits, high case	15,167	15,275	15,384	15,492	15,600	15,709	15,817	15,925	16,034	16,142	16,250	16,359	16,467	16,575	16,684
<i>Estimated cost of Narcan kits</i>																
2019\$ [A]																
[4]	Wholesale price \$111 / kit	\$116	\$122	\$128	\$134	\$140	\$147	\$153	\$160	\$167	\$175	\$183	\$191	\$200	\$209	\$219
[5]	Average # per person per year	1.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
[6]	Average cost per person per year	\$116	\$244	\$256	\$268	\$281	\$293	\$306	\$320	\$334	\$349	\$366	\$383	\$400	\$419	\$438
<i>Salary cost of distributing kits</i>																
2019\$ [B]																
[7]	Distribution program administrators 2															
[8]	Estimated FTE salary \$55,500															
[9]	Salary cost (\$000) \$111	\$115	\$119	\$123	\$127	\$131	\$135	\$139	\$143	\$148	\$152	\$157	\$162	\$167	\$172	\$177
<i>Labor Cost</i>																
<i>Estimated employment cost</i>																
Multiplier [C]																
[10]	FTE employment cost, base case (\$000s) 1.75x	\$201	\$208	\$215	\$222	\$229	\$236	\$243	\$251	\$258	\$266	\$274	\$283	\$291	\$300	\$310
<i>Total cost of Narcan kits</i>																
2020-2034 [D]																
[11]	Low case (\$000s) \$72,021	\$1,963	\$3,882	\$4,039	\$4,201	\$4,363	\$4,522	\$4,686	\$4,857	\$5,033	\$5,225	\$5,423	\$5,629	\$5,842	\$6,064	\$6,293
[12]	Base case (\$000s) \$76,169	\$1,963	\$3,908	\$4,094	\$4,289	\$4,484	\$4,681	\$4,885	\$5,099	\$5,322	\$5,565	\$5,819	\$6,085	\$6,363	\$6,653	\$6,957
[13]	High case (\$000s) \$80,317	\$1,963	\$3,935	\$4,150	\$4,376	\$4,606	\$4,839	\$5,084	\$5,342	\$5,612	\$5,906	\$6,215	\$6,541	\$6,883	\$7,243	\$7,622
<i>Naloxone for first responders</i>																
2019\$ [E]																
[14]	Average price per dose \$43 / dose	\$46	\$48	\$50	\$53	\$55	\$57	\$60	\$63	\$66	\$69	\$72	\$75	\$79	\$82	\$86
[15]	Naloxone purchased 12,082 doses															
[16]	Cost of Naloxone purchased \$524,283															
[17]	Naloxone doses purchased for first responders, low case	12,082	10,572	9,062	7,551	6,041	6,041	6,041	6,041	6,041	6,041	6,041	6,041	6,041	6,041	6,041
[18]	Naloxone doses purchased for first responders, base case	12,082	11,327	10,572	9,817	9,062	9,062	9,062	9,062	9,062	9,062	9,062	9,062	9,062	9,062	9,062
[19]	Naloxone doses purchased for first responders, high case	12,082	12,082	12,082	12,082	12,082	12,082	12,082	12,082	12,082	12,082	12,082	12,082	12,082	12,082	12,082
<i>Total cost for first responders</i>																
2020-2034 [F]																
[20]	Low case (\$000s) \$6,517	\$551	\$506	\$455	\$397	\$333	\$347	\$363	\$379	\$396	\$414	\$433	\$453	\$474	\$496	\$520
[21]	Base case (\$000s) \$9,053	\$551	\$542	\$530	\$516	\$499	\$521	\$544	\$568	\$594	\$621	\$650	\$680	\$712	\$745	\$779
[22]	High case (\$000s) \$11,588	\$551	\$578	\$606	\$636	\$665	\$695	\$726	\$758	\$791	\$828	\$867	\$907	\$949	\$993	\$1,039

Table C.8

Estimated Cost of Naloxone, Cuyahoga County

Sources and Notes:

See Table I for actual and projected inflation rates used.

[C]: Multiplier intended to capture labor costs beyond salary, such as fringe benefits and office costs.

[D],[F]=Σ(Year 1 to Year 15).

[1]-[3]: Year 1 from Table C.0[6]. Base case projects that the population requiring Narcan kits remains constant, high case projects that it increases by 10%, and low case projects that it decreases by 10%.

[4]: [4A] estimated based on the wholesale price for Narcan nasal spray kit (containing 2 doses) paid by Cleveland EMS in October and November of 2017. CLEVE_001627553. Year 1 onwards grown at prescription drug price inflation.

[5]: Projects the distribution of one kit per person requiring Narcan kits in Year 1, increasing to two kits distributed per individual by Year 2.

[6]=[4]*[5].

[8]: Salary estimated based on Cuyahoga County salary data for comparable employee types. CUYAH_002426286.

[9]: [9B]=([7]*[8])/10^3. Year 1 onwards grown at projected employment cost inflation.

[10]=[9]*[C].

[11]=([1]*[6])/10^3+[10].

[12]=([2]*[6])/10^3+[10].

[13]=([3]*[6])/10^3+[10].

[14]: [E14] estimated based on the actual average price per dose of Naloxone purchased by Cleveland EMS in 2017. CLEVE_001627553. Year 1 onwards grown at prescription drug price inflation.

[15]: Based on the actual number of doses purchased by Cleveland EMS in 2017. CLEVE_001627553.

[16]=[14]*[15].

[17]-[19]: Year 1 from [15]. High case projects that the doses purchased for first responders remains constant, base case projects a 25% decline by Year 5, and low case projects a 50% decline by Year 5.

[20]=([17]*[14])/10^3.

[21]=([18]*[14])/10^3.

[22]=([19]*[14])/10^3.

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Table S.8
Estimated Cost of Naloxone, Summit County

		Year 1 2020	Year 2 2021	Year 3 2022	Year 4 2023	Year 5 2024	Year 6 2025	Year 7 2026	Year 8 2027	Year 9 2028	Year 10 2029	Year 11 2030	Year 12 2031	Year 13 2032	Year 14 2033	Year 15 2034
<u>Projected population requiring Narcan kits</u>																
[1]	Population requiring Narcan kits, low case	6,576	6,529	6,482	6,435	6,388	6,341	6,294	6,247	6,200	6,153	6,106	6,059	6,012	5,965	5,918
[2]	Population requiring Narcan kits, base case	6,576	6,576	6,576	6,576	6,576	6,576	6,576	6,576	6,576	6,576	6,576	6,576	6,576	6,576	6,576
[3]	Population requiring Narcan kits, high case	6,576	6,623	6,670	6,717	6,764	6,810	6,857	6,904	6,951	6,998	7,045	7,092	7,139	7,186	7,233
<u>Estimated cost of Narcan kits</u> <u>2019\$ [A]</u>																
[4]	Wholesale price \$111 / kit	\$116	\$122	\$128	\$134	\$140	\$147	\$153	\$160	\$167	\$175	\$183	\$191	\$200	\$209	\$219
[5]	Average # per person per year	1.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
[6]	Average cost per person per year	\$116	\$244	\$256	\$268	\$281	\$293	\$306	\$320	\$334	\$349	\$366	\$383	\$400	\$419	\$438
<u>Salary cost of distributing kits</u> <u>2019\$ [B]</u>																
[7]	Distribution program administrators 2															
[8]	Estimated FTE salary \$55,500															
[9]	Salary cost (\$000)	\$111	\$119	\$123	\$127	\$131	\$135	\$139	\$143	\$148	\$152	\$157	\$162	\$167	\$172	\$177
<u>Labor Cost</u>																
<u>Estimated employment cost</u> <u>Multiplier [C]</u>																
[10]	FTE employment cost, base case (\$000s) 1.75x	\$201	\$208	\$215	\$222	\$229	\$236	\$243	\$251	\$258	\$266	\$274	\$283	\$291	\$300	\$310
<u>Total cost of Narcan kits</u> <u>2020-2034 [D]</u>																
[11]	Low case (\$000s) \$33,372	\$965	\$1,801	\$1,873	\$1,947	\$2,021	\$2,094	\$2,170	\$2,248	\$2,328	\$2,416	\$2,507	\$2,601	\$2,698	\$2,799	\$2,903
[12]	Base case (\$000s) \$35,170	\$965	\$1,812	\$1,897	\$1,985	\$2,074	\$2,163	\$2,256	\$2,353	\$2,454	\$2,564	\$2,678	\$2,798	\$2,924	\$3,055	\$3,192
[13]	High case (\$000s) \$36,968	\$965	\$1,824	\$1,921	\$2,023	\$2,127	\$2,232	\$2,342	\$2,458	\$2,579	\$2,711	\$2,850	\$2,996	\$3,149	\$3,311	\$3,480
<u>Naloxone for first responders</u> <u>2019\$ [E]</u>																
[14]	Average price per dose \$43 / dose	\$46	\$48	\$50	\$53	\$55	\$57	\$60	\$63	\$66	\$69	\$72	\$75	\$79	\$82	\$86
[15]	Naloxone purchased 5,238 doses															
[16]	Cost of Naloxone purchased \$227,302															
[17]	Naloxone doses purchased for first responders, low case	5,238	4,583	3,929	3,274	2,619	2,619	2,619	2,619	2,619	2,619	2,619	2,619	2,619	2,619	2,619
[18]	Naloxone doses purchased for first responders, base case	5,238	4,911	4,583	4,256	3,929	3,929	3,929	3,929	3,929	3,929	3,929	3,929	3,929	3,929	3,929
[19]	Naloxone doses purchased for first responders, high case	5,238	5,238	5,238	5,238	5,238	5,238	5,238	5,238	5,238	5,238	5,238	5,238	5,238	5,238	5,238
<u>Total cost for first responders</u> <u>2020-2034 [F]</u>																
[20]	Low case (\$000s) \$2,826	\$239	\$219	\$197	\$172	\$144	\$151	\$157	\$164	\$172	\$180	\$188	\$197	\$206	\$215	\$225
[21]	Base case (\$000s) \$3,925	\$239	\$235	\$230	\$224	\$216	\$226	\$236	\$246	\$257	\$269	\$282	\$295	\$309	\$323	\$338
[22]	High case (\$000s) \$5,024	\$239	\$251	\$263	\$276	\$288	\$301	\$315	\$329	\$343	\$359	\$376	\$393	\$411	\$431	\$450

Table S.8

Estimated Cost of Naloxone, Summit County

Sources and Notes:

See Table I for actual and projected inflation rates used.

[C]: Multiplier intended to capture labor costs beyond salary, such as fringe benefits and office costs.

[D],[F]= Σ (Year 1 to Year 15).

[1]-[3]: Year 1 from Table S.0[6]. Base case projects that the population requiring Narcan kits remains constant, high case projects that it increases by 10%, and low case projects that it decreases by 10%.

[4]=Table C.8[4].

[5]: Projects the distribution of one kit per person requiring Narcan kits in Year 1, increasing to two kits distributed per individual by Year 2.

[6]=[4]*[5].

[8]=Table C.8[8].

[9]: [9B]=([7]*[8])/10³. Year 1 onwards grown at projected employment cost inflation.

[10]=[9]*[C].

[11]=([1]*[6])/10³+ [10].

[12]=([2]*[6])/10³+ [10].

[13]=([3]*[6])/10³+ [10].

[14]=Table C.8[14].

[15]=Table C.8[15]*(Table S.0[2]/Table C.0[2]).

[16]=[14]*[15].

[17]-[19]: Year 1 from [15]. High case projects that the doses purchased for first responders remains constant, base case projects a 25% decline by Year 5, and low case projects a 50% decline by Year 5.

[20]=([17]*[14])/10³.

[21]=([18]*[14])/10³.

[22]=([19]*[14])/10³.

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Table C.9
Estimated Cost of Syringe Exchange Program, Cuyahoga County

		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15
		2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
	<i>2019\$ [A]</i>															
[1]	Monthly average # of syringes provided	41,250														
[2]	ODU % of program clients	67.4%														
[3]	Monthly avg # of syringes provided to OUD individ.	27,787														
	<i># of syringes to provide</i>															
[4]	Syringes provided per month, low case	34,734	41,680	41,680	41,680	41,680	41,264	40,847	40,430	40,013	39,596	39,180	38,763	38,346	37,929	37,512
[5]	Syringes provided per month, base case	34,734	41,680	41,680	41,680	41,680	41,680	41,680	41,680	41,680	41,680	41,680	41,680	41,680	41,680	41,680
[6]	Syringes provided per month, high case	34,734	41,680	41,680	41,680	41,680	42,097	42,514	42,931	43,348	43,764	44,181	44,598	45,015	45,432	45,848
	<i>Cost of exchange program per syringe</i>	<i>2019\$ [B]</i>														
[7]	Program cost per syringe distributed	\$1.25	\$1.28	\$1.32	\$1.35	\$1.38	\$1.42	\$1.45	\$1.48	\$1.52	\$1.55	\$1.59	\$1.63	\$1.66	\$1.70	\$1.75
	<i>Total cost of exchange program</i>	<i>2020-2034 [C]</i>														
[8]	Low case (\$000s)	\$10,867	\$535	\$658	\$675	\$691	\$708	\$717	\$726	\$735	\$744	\$754	\$764	\$774	\$784	\$795
[9]	Base case (\$000s)	\$11,325	\$535	\$658	\$675	\$691	\$708	\$724	\$741	\$758	\$775	\$794	\$813	\$833	\$853	\$873
[10]	High case (\$000s)	\$11,784	\$535	\$658	\$675	\$691	\$708	\$732	\$756	\$781	\$806	\$834	\$862	\$891	\$921	\$952

Sources and Notes:

See Table I for actual and projected inflation rates used.

[C]=Σ(Year 1 to Year 15).

[1]: Equal to the average # of syringes distributed in the year ended June 30, 2016. Circle Health Services, Form 990 for the year ended June 30, 2016 at 44.

[2]=Table S.9[2].

[3]=[1]*[2].

[4]-[6]: All cases assume the number of syringes provided to individuals with OUD increases by 50% by Year 2. Base case assumes the number of syringes provided to individuals with OUD remains constant after Year 2, low case assumes a decline of 10%, and high case assumes an increase of 10%.

[7]: Cost based on the operating costs reported by Cleveland's Circle Health Services (Form 990 for the year ended June 30, 2016 at p. 44) and a study reporting the average cost per syringe distributed in exchange programs (Lurie P, Gorsky R, Jones TS et al. (1998)). Year 1 onwards grown at projected inflation.

[8]=([4]*12*[7])/10^3.

[9]=([5]*12*[7])/10^3.

[10]=([6]*12*[7])/10^3.

Table S.9
Estimated Cost of Syringe Exchange Program, Summit County

		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15
		2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
	2019\$ [A]															
[1]	Monthly average # of syringes provided	24,225														
[2]	OUD % of program clients	67.4%														
[3]	Monthly avg # of syringes provided to OUD individ.	16,318														
	# of syringes to provide															
[4]	Syringes provided per month, low case	21,758	27,197	27,197	27,197	27,197	26,925	26,654	26,382	26,110	25,838	25,566	25,294	25,022	24,750	24,478
[5]	Syringes provided per month, base case	21,758	27,197	27,197	27,197	27,197	27,197	27,197	27,197	27,197	27,197	27,197	27,197	27,197	27,197	27,197
[6]	Syringes provided per month, high case	21,758	27,197	27,197	27,197	27,197	27,469	27,741	28,013	28,285	28,557	28,829	29,101	29,373	29,645	29,917
	Cost of exchange program per syringe	2019\$ [B]														
[7]	Program cost per syringe distributed	\$1.25	\$1.28	\$1.32	\$1.35	\$1.38	\$1.42	\$1.45	\$1.48	\$1.52	\$1.55	\$1.59	\$1.63	\$1.66	\$1.70	\$1.75
	Total cost of exchange program	2020-2034 [C]														
[8]	Low case (\$000s)	\$7,077	\$335	\$429	\$440	\$451	\$462	\$468	\$474	\$480	\$486	\$492	\$499	\$505	\$512	\$518
[9]	Base case (\$000s)	\$7,376	\$335	\$429	\$440	\$451	\$462	\$473	\$484	\$495	\$506	\$518	\$531	\$543	\$556	\$570
[10]	High case (\$000s)	\$7,675	\$335	\$429	\$440	\$451	\$462	\$477	\$493	\$509	\$526	\$544	\$562	\$581	\$601	\$621

Sources and Notes:

See Table I for actual and projected inflation rates used.

[C]=Σ(Year 1 to Year 15).

[1]: Actual monthly average # of syringes distributed in January and February 2019. (<https://www.scph.org/dashboards>)

[2]: Based on the % of clients of the Summit County syringe exchange program reporting heroin, fentanyl or opioid use in January-February 2019.

[3]=[1]*[2].

[4]-[6]: All cases assume the number of syringes provided to individuals with OUD increases by ~66% by Year 2. Base case assumes the number of syringes provided to individuals with OUD remains constant after Year 2, low case assumes a decline of 10% beginning in Year 6, and high case assumes an increase of 10% beginning in Year 6.

[7]: Cost based on the operating costs reported by Cleveland's Circle Health Services (Form 990 for the year ended June 30, 2016 at p. 44) and a study reporting the average cost per syringe distributed in exchange programs (Lurie P, Gorsky R, Jones TS et al. (1998)). Year 1 onwards grown at projected inflation.

[8]=([4]*12*[7])/10^3.

[9]=([5]*12*[7])/10^3.

[10]=([6]*12*[7])/10^3.

Table C.10
Estimated Cost of HIV and HCV Treatment, Cuyahoga County

		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15
		2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
<i>HIV treatment costs</i>		<i>2019\$ [A]</i>														
[1]	Persons living with diagnosed HIV	4,940														
[2]	% infected via injection drug use	10.0%														
[3]	Opioid % of injection drug use	56.5%														
[4]	Current pop. with opioid-related HIV	279	275	270	266	262	258	254	250	246	242	238	234	231	227	224
[5]	Annual mortality risk	1.6%														
[6]	Annual cost of HIV treatment (\$000s)	\$30	\$31	\$33	\$34	\$36	\$37	\$39	\$40	\$42	\$44	\$46	\$48	\$50	\$52	\$54
[7]	Est. total HIV treatment cost (\$000s)	\$8,638	\$8,893	\$9,140	\$9,394	\$9,638	\$9,873	\$10,112	\$10,358	\$10,610	\$10,886	\$11,170	\$11,460	\$11,759	\$12,065	\$12,379
<i>HCV treatment costs</i>		<i>2019\$ [B]</i>														
[8]	Ratio of HCV-to-HIV prev. among IDUs	6.1														
[9]	Current pop. with opioid-related HCV	1,711	1,701	1,453	1,241	1,060	906	774	661	564	482	412	352	300	257	219
[10]	Annual mortality risk	0.6%														
[11]	% receiving treatment	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%
[12]	# receiving treatment for HCV	255	218	186	159	136	116	99	85	72	62	53	45	38	33	28
[13]	% cured by treatment	94.0%	94.0%	94.0%	94.0%	94.0%	94.0%	94.0%	94.0%	94.0%	94.0%	94.0%	94.0%	94.0%	94.0%	94.0%
[14]	Cost of HCV treatment (\$000s)	\$24	\$25	\$26	\$28	\$29	\$30	\$32	\$33	\$35	\$36	\$38	\$40	\$42	\$43	\$45
[15]	Est. total HCV treatment costs (\$000s)	\$6,432	\$5,770	\$5,167	\$4,627	\$4,135	\$3,689	\$3,292	\$2,937	\$2,620	\$2,342	\$2,093	\$1,871	\$1,672	\$1,495	\$1,336
<i>Total cost of treating HIV/HCV</i>		<i>2020-2034 [C]</i>														
[16]	Base case (\$000s)	\$205,851	\$15,070	\$14,663	\$14,307	\$14,020	\$13,774	\$13,562	\$13,404	\$13,295	\$13,230	\$13,228	\$13,263	\$13,331	\$13,431	\$13,560

Sources and Notes:

See Table I for actual and projected inflation rates used.

[B]: Multiplier intended to capture labor costs beyond salary, such as fringe benefits and office costs.

[C]=Σ(Year 1 to Year 15).

[1]: Ohio Department of Public Health, Cuyahoga County HIV Surveillance Data Tables, July 20, 2018.

[2]: Between 2000 and 2015, injection drug users (IDUs) represented ~6 to ~15% of new HIV diagnoses. Dawson and Kates, "HIV and the Opioid Epidemic: 5 Key Points," KFF, March 27, 2018.

[3]=2,508 thousand persons with lifetime heroin injection / 4,442 thousand persons with lifetime injection drug use. 2017 NSDUH, Table 1.96A.

[4]: [4A]=[1]*[2]*[3]. Year 1 onwards decreased by annual mortality risk in [5].

[5]: The CDC reports that 1,008,929 people were living with diagnosed HIV infection in 2016 and that there were 15,807 deaths among people with diagnosed HIV in 2016.

[6]: The CDC reports that the average annual cost of HIV care was estimated to be \$23,000 in 2010\$. Year 1 onwards grown at projected medical services inflation.

[7]=[4]*[6]. These costs represent the cost to treat current opioid-related HIV infections. The future cost of treating new opioid-related cases would be additive to this estimate. The CDC reports that the estimated lifetime HIV treatment cost is \$379,668 in 2010\$.

[8]=55.2% prevalence of HCV among IDUs / 9.0% prevalence of HIV among IDUs. Degenhardt, Peacock, Colledge et al. (2017).

[9]: [9B]=[4]*[8]. Year 1 onwards decreased by annual mortality risk in [10] and by the rate of treatments leading to cure (e.g., [11]*[13]).

[11]: Assumed treatment pattern.

[12]=[9]*[11].

[13]: Clinical studies indicate that the cure rate for HCV treatments range from ~89% to ~99%.

[14]: Generic versions of most effective HCV drugs (Epclusa and Harvoni) became available in January 2019, \$24,000 is the list price for the most common course of treatment (12-weeks). Year 1 onwards grows at projected prescription drug inflation.

[15]=[12]*[14]. These costs represent the cost to treat current opioid-related HCV infections. The future cost of treating new opioid-related cases would be additive to this estimate.

[16]=[7]+[15].

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Table S.10
Estimated Cost of HIV and HCV Treatment, Summit County

		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15
		2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
<i>HIV treatment costs</i>		<i>2019\$ [A]</i>														
[1]	Persons living with diagnosed HIV	965														
[2]	% infected via injection drug use	10.0%														
[3]	Opioid % of injection drug use	56.5%														
[4]	Current pop. with opioid-related HIV	54	54	53	52	51	50	50	49	48	47	47	46	45	44	43
[5]	Annual mortality risk	1.6%														
[6]	Annual cost of HIV treatment (\$000s)	\$30	\$31	\$33	\$34	\$36	\$37	\$39	\$40	\$42	\$44	\$46	\$48	\$50	\$52	\$56
[7]	Est. total HIV treatment cost (\$000s)	\$1,687	\$1,737	\$1,785	\$1,835	\$1,883	\$1,929	\$1,975	\$2,023	\$2,073	\$2,127	\$2,182	\$2,239	\$2,297	\$2,357	\$2,418
<i>HCV treatment costs</i>		<i>2019\$ [A]</i>														
[8]	Ratio of HCV-to-HIV prev. among IDUs	6.1														
[9]	Current pop. with opioid-related HCV	334	332	284	242	207	177	151	129	110	94	80	69	59	50	37
[10]	Annual mortality risk	0.6%														
[11]	% receiving treatment	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%
[12]	# receiving treatment for HCV	50	43	36	31	27	23	19	17	14	12	10	9	8	6	5
[13]	% cured by treatment	94.0%	94.0%	94.0%	94.0%	94.0%	94.0%	94.0%	94.0%	94.0%	94.0%	94.0%	94.0%	94.0%	94.0%	94.0%
[14]	Cost of HCV treatment (\$000s)	\$24	\$25	\$26	\$28	\$29	\$30	\$32	\$33	\$35	\$36	\$38	\$40	\$42	\$43	\$48
[15]	Est. total HCV treatment costs (\$000s)	\$1,256	\$1,127	\$1,009	\$904	\$808	\$721	\$643	\$574	\$512	\$457	\$409	\$365	\$327	\$292	\$261
<i>Total cost of treating HIV/HCV</i>		<i>2020-2034 [C]</i>														
[16]	Base case (\$000s)	\$40,212	\$2,944	\$2,864	\$2,795	\$2,739	\$2,691	\$2,649	\$2,618	\$2,597	\$2,584	\$2,584	\$2,591	\$2,604	\$2,624	\$2,649

Sources and Notes:

See Table I for actual and projected inflation rates used.

[B]: Multiplier intended to capture labor costs beyond salary, such as fringe benefits and office costs.

[C]=Σ(Year 1 to Year 15).

[1]: Ohio Department of Public Health, Summit County HIV Surveillance Data Tables, July 20, 2018.

[2]: Between 2000 and 2015, injection drug users (IDUs) represented ~6 to ~15% of new HIV diagnoses. Dawson and Kates, "HIV and the Opioid Epidemic: 5 Key Points," KFF, March 27, 2018.

[3]=2,508 thousand persons with lifetime heroin injection / 4,442 thousand persons with lifetime injection drug use. 2017 NSDUH, Table 1.96A.

[4]: [4A]=[1]*[2]*[3]. Year 1 onwards decreased by annual mortality risk in [5].

[5]: The CDC reports that 1,008,929 people were living with diagnosed HIV infection in 2016 and that there were 15,807 deaths among people with diagnosed HIV in 2016.

[6]: The CDC reports that the average annual cost of HIV care was estimated to be \$23,000 in 2010\$. Year 1 onwards grown at projected medical services inflation.

[7]=[4]*[6]. These costs represent the cost to treat current opioid-related HIV infections. The future cost of treating new opioid-related cases would be additive to this estimate. The CDC reports that the estimated lifetime HIV treatment cost is \$379,668 in 2010\$.

[8]=55.2% prevalence of HCV among IDUs / 9.0% prevalence of HIV among IDUs. Degenhardt, Peacock, Colledge et al. (2017).

[9]: [9A]=[4]*[8]. Year 1 onwards decreased by annual mortality risk in [10] and by the rate of treatments leading to cure (e.g., [11]*[13]).

[11]: Assumed treatment pattern.

[12]=[9]*[11].

[13]: Clinical studies indicate that the cure rate for HCV treatments range from ~89% to ~99%.

[14]: Generic versions of most effective HCV drugs (Epclusa and Harvoni) became available in January 2019, \$24,000 is the list price for the most common course of treatment (12-weeks). Year 1 onwards grows at projected prescription drug inflation.

[15]=[12]*[14]. These costs represent the cost to treat current opioid-related HCV infections. The future cost of treating new opioid related cases would be additive to this estimate.

[16]=[7]+[15].

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Table C.11

Estimated Cost of Social Support Housing, Cuyahoga County

		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15
		2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
	<i>Transitional housing for homeless with OUD</i>	<i>2019\$ [A]</i>														
[1]	Avg # of homeless individuals per night	1,377														
[2]	Avg # of homeless families per night	123														
[3]	Avg # of homeless households per night	1,500														
[4]	ODU prevalence among homeless	17.9%														
[5]	Avg # of homeless with OUD per night	269														
[6]	Annual cost of supportive housing unit	\$12,000														
[7]	Housing cost (\$000s)	\$3,228	\$3,312	\$3,398	\$3,483	\$3,570	\$3,656	\$3,740	\$3,826	\$3,914	\$4,004	\$4,100	\$4,198	\$4,299	\$4,402	\$4,508
	<i>Total cost for transitional housing</i>	<i>2020-2034 [B]</i>														
[8]	Base case (\$000s)	\$59,026	\$3,312	\$3,398	\$3,483	\$3,570	\$3,656	\$3,740	\$3,826	\$3,914	\$4,004	\$4,100	\$4,198	\$4,299	\$4,402	\$4,508

Sources and Notes:

See Table I for actual and projected inflation rates used.

[B]=Σ(Year 1 to Year 15).

[1]-[2]: Point-in-time estimate of homelessness in Cuyahoga County in 2018. HUD Homelessness Data Exchange.

[3]=[1]+[2].

[4]: Based on national prevalence of OUD among homeless veterans. Iheanacho, Stefanovics, & Rosenheck (2018): "Altogether, 17.9 percent of homeless VHA users were diagnosed with OUD."

[5]=[1]*[2].

[6]: Estimated based on 2019 fair market rents published by HUD and HUD research finding that permanent supportive housing for individuals is ~144% of fair market rent for a 1-bedroom rental unit and for families is ~134% of fair market rent for a 2-bedroom rental unit. Estimate is weighted by distribution of homeless households between individuals and families.

[7]: [7A]=([5]*[6])/10^3. Year 1 onwards grown at projected inflation.

[8]=[7].

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Table S.11

Estimated Cost of Social Support Housing, Summit County

		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	
		2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	
	<i>Transitional housing for homeless with OUD</i>	<i>2019\$ [A]</i>															
[1]	Avg # of homeless individuals per night	462															
[2]	Avg # of homeless families per night	35															
[3]	Avg # of homeless households per night	497															
[4]	OUD prevalence among homeless	17.9%															
[5]	Avg # of homeless with OUD per night	89															
[6]	Annual cost of supportive housing unit	\$11,000															
[7]	Housing cost (\$000s)	\$979	\$1,004	\$1,031	\$1,056	\$1,083	\$1,109	\$1,134	\$1,160	\$1,187	\$1,214	\$1,243	\$1,273	\$1,304	\$1,335	\$1,367	\$1,400
	<i>Total cost for transitional housing</i>	<i>2020-2034 [B]</i>															
[8]	Base case (\$000s)	\$17,902	\$1,004	\$1,031	\$1,056	\$1,083	\$1,109	\$1,134	\$1,160	\$1,187	\$1,214	\$1,243	\$1,273	\$1,304	\$1,335	\$1,367	\$1,400

Sources and Notes:

See Table I for actual and projected inflation rates used.

[B]=Σ(Year 1 to Year 15).

[1]-[2]: Point-in-time estimate of homelessness in Summit County in 2018. HUD Homelessness Data Exchange.

[3]=[1]+[2].

[4]: Based on national prevalence of OUD among homeless veterans. Iheanacho, Stefanovics, & Rosenheck (2018): "Altogether, 17.9 percent of homeless VHA users were diagnosed with OUD."

[5]=[1]*[2].

[6]: Estimated based on 2019 fair market rents published by HUD and HUD research finding that permanent supportive housing for individuals is ~144% of fair market rent for a 1-bedroom rental unit and for families is ~134% of fair market rent for a 2-bedroom rental unit. Estimate is weighted by distribution of homeless households between individuals and families.

[7]: [7A]=([5]*[6])/10^3. Year 1 onwards grown at projected inflation.

[8]=[7].

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APPENDIX D: PRIMARY PREVENTION

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APPENDIX D

Table C.12
Estimated Cost of Media Campaign, Cuyahoga County

		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15
		2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
<i>Target population for campaign July 1, 2017 [A]</i>																
[1]	12-25 year old population	220,086	220,086	219,371	218,658	217,947	217,239	216,533	215,829	215,128	214,429	213,732	213,037	212,345	211,655	210,967
<i>Estimated cost of campaign 2019\$ [B]</i>																
[2]	Per targeted individual	\$0.40 / month	\$0.41	\$0.42	\$0.44	\$0.45	\$0.46	\$0.47	\$0.48	\$0.49	\$0.50	\$0.51	\$0.53	\$0.54	\$0.55	\$0.56
[3]	# of months of campaign will run	6	12	12	12	12	12	12	12	12	12	12	12	12	12	12
[4]	Estimated cost per target per year	\$2.49	\$5.10	\$5.23	\$5.36	\$5.49	\$5.61	\$5.74	\$5.87	\$6.01	\$6.15	\$6.30	\$6.45	\$6.61	\$6.77	\$6.93
<i>Total cost of campaign 2020-2034 [C]</i>																
[5]	Base case (\$000s)	\$18,485	\$547	\$1,119	\$1,143	\$1,168	\$1,192	\$1,215	\$1,239	\$1,264	\$1,288	\$1,315	\$1,342	\$1,370	\$1,398	\$1,427
																\$1,457

Sources and Notes:

See Table I for actual and projected inflation rates used.

[A]: National Center for Health Statistics, Bridged-Race Population Estimates, July 1st resident population age 12 to 25 years old, Cuyahoga County.

[C]=Σ(Year 1 to Year 15).

[1]: Target audience based on Georgia's "Generation Rx" campaign, which aims to prevent the misuse/abuse of prescription drugs among 12-25 year olds. Growth after Year 1 projected based on county population projections published by the Ohio Development Services Agency.

[2]: [2B] estimated based on the FDA's "The Real Cost" anti-smoking campaign. Mac Monegle et al (2018). Year 1 onwards grown at projected inflation.

[3]: Projects that media campaign will be launched by second half of Year 1.

[4]=[2]*[3].

[5]=([1]*[4])/10^3.

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Table S.12
Estimated Cost of Media Campaign, Summit County

		Year 1 2020	Year 2 2021	Year 3 2022	Year 4 2023	Year 5 2024	Year 6 2025	Year 7 2026	Year 8 2027	Year 9 2028	Year 10 2029	Year 11 2030	Year 12 2031	Year 13 2032	Year 14 2033	Year 15 2034
<i>Target population for campaign July 1, 2017 [A]</i>																
[1]	12-25 year old population	94,300	94,300	94,248	94,196	94,144	94,092	94,040	93,988	93,936	93,884	93,832	93,780	93,728	93,676	93,572
<i>Estimated cost of campaign 2019\$ [B]</i>																
[2]	Per targeted individual	\$0.40 / month	\$0.41	\$0.42	\$0.44	\$0.45	\$0.46	\$0.47	\$0.48	\$0.49	\$0.50	\$0.51	\$0.53	\$0.54	\$0.55	\$0.58
[3]	# of months of campaign will run	6	12	12	12	12	12	12	12	12	12	12	12	12	12	12
[4]	Estimated cost per target per year	\$2.49	\$5.10	\$5.23	\$5.36	\$5.49	\$5.61	\$5.74	\$5.87	\$6.01	\$6.15	\$6.30	\$6.45	\$6.61	\$6.77	\$6.93
<i>Total cost of campaign 2020-2034 [C]</i>																
[5]	Base case (\$000s)	\$8,085	\$234	\$481	\$492	\$504	\$516	\$528	\$540	\$552	\$564	\$577	\$591	\$605	\$619	\$648

Sources and Notes:

See Table I for actual and projected inflation rates used.

[A]: National Center for Health Statistics, Bridged-Race Population Estimates, July 1st resident population age 12 to 25 years old, Summit County.

[C]=Σ(Year 1 to Year 15).

[1]: Target audience based on Georgia's "Generation Rx" campaign, which aims to prevent the misuse/abuse of prescription drugs among 12-25 year olds. Growth after Year 1 projected based on county population projections published by the Ohio Development Services Agency.

[2]: [2B] estimated based on the FDA's "The Real Cost" anti-smoking campaign. Mac Monegle et al (2018). Year 1 onwards grown at projected inflation.

[3]: Projects that media campaign will be launched by second half of Year 1.

[4]=[2]*[3].

[5]=([1]*[4])/10^3.

Table C.13
Estimated Cost of School-Based Prevention, Cuyahoga County

		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15
		2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
<i>Salary cost of personnel</i>		<i>2019\$ [A]</i>														
[1]	# of social workers required to help students affected by opioid crisis	106														
[2]	FTE salary estimate	\$45,000														
[3]	Salary cost (\$000s)	\$4,770	\$4,939	\$5,114	\$5,285	\$5,457	\$5,628	\$5,800	\$5,977	\$6,159	\$6,347	\$6,541	\$6,740	\$6,946	\$7,158	\$7,376
		<i>Labor Cost</i>														
<i>Estimated employment cost</i>		<i>Multiplier [B]</i>														
[4]	FTE employment cost, base case (\$000s)	1.75x	\$8,643	\$8,949	\$9,249	\$9,549	\$9,850	\$10,150	\$10,460	\$10,779	\$11,108	\$11,447	\$11,796	\$12,156	\$12,526	\$12,908
		<i>2019\$ [C]</i>														
[5]	Cost of prevention curriculum per pupil	\$52														
[6]	# of students, grades 6-12	106,380														
[7]	Cost of prevention curriculum (\$000s)	\$5,532	\$5,676	\$5,823	\$5,969	\$6,118	\$6,265	\$6,409	\$6,556	\$6,707	\$6,861	\$7,026	\$7,195	\$7,367	\$7,544	\$7,725
		<i>2020-2034 [D]</i>														
[8]	Base case (\$000s)	\$264,023	\$14,319	\$14,773	\$15,218	\$15,667	\$16,115	\$16,559	\$17,016	\$17,486	\$17,969	\$18,473	\$18,990	\$19,523	\$20,070	\$21,213

Sources and Notes:

See Table I for actual and projected inflation rates used.

[B]: Multiplier intended to capture labor costs beyond salary, such as fringe benefits and office costs.

[D]=Σ(Year 1 to Year 15).

[1]: Estimated based on public and private school enrollment data from the National Center for Education Statistics and the assumption that approximately 25% of students have more intensive needs due to the opioid crisis. The recommended student-social worker ratio is lower for students with intensive needs. National Association of Social Workers, Standards for School Social Work Services (2012) at p.18: "School social work services should be provided at a ratio of one school social worker to each school building serving up to 250 general education students, or a ratio of 1:250 students. When a school social worker is providing services to students with intensive needs, a lower ratio, such as 1:50, is suggested."

[2]: Salary estimated based on the salary range for school counselors in the Cleveland area reported by Glassdoor.

[3]: $[3A] = ([1] * [2]) / 10^3$. Year 1 onwards grown at projected employment cost inflation.

[4] = [3] * [B].

[5]: Estimate based on SAMSHA/HHS study, which found that Youth Substance Abuse Prevention Programs cost on average \$52/pupil for materials and training. SAMSHA/HHS, "Substance Abuse Prevention Dollars and Cents: A Cost-Benefit Analysis," Table A4: Estimated Program Costs by Component (in 2002 dollars).

[6]: Public and private school enrollment data from the National Center for Education Statistics.

[7]: $[7C] = ([5] * [6]) / 10^3$. Year 1 onwards grown at projected inflation.

[8] = [4] + [7].

Table S.13

Estimated Cost of School-Based Prevention, Summit County

		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15
		2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
<i>Salary cost of personnel</i>		<i>2019\$ [A]</i>														
[1]	# of social workers required to help students affected by opioid crisis	46														
[2]	FTE salary estimate	\$45,000														
[3]	Salary cost (\$000s)	\$2,070	\$2,143	\$2,219	\$2,293	\$2,368	\$2,443	\$2,517	\$2,594	\$2,673	\$2,754	\$2,839	\$2,925	\$3,014	\$3,106	\$3,201
<i>Estimated employment cost</i>		<i>Labor Cost Multiplier [B]</i>														
[4]	FTE employment cost, base case (\$000s)	1.75x	\$3,751	\$3,884	\$4,014	\$4,144	\$4,274	\$4,405	\$4,539	\$4,678	\$4,820	\$4,967	\$5,119	\$5,275	\$5,436	\$5,602
<i>Estimated cost of curriculum</i>		<i>2019\$ [C]</i>														
[5]	Cost of prevention curriculum per pupil	\$52														
[6]	# of students, grades 6-12	45,599														
[7]	Cost of prevention curriculum (\$000s)	\$2,371	\$2,433	\$2,496	\$2,558	\$2,622	\$2,685	\$2,747	\$2,810	\$2,875	\$2,941	\$3,012	\$3,084	\$3,158	\$3,234	\$3,311
<i>Estimated total cost</i>		<i>2020-2034 [D]</i>														
[8]	Base case (\$000s)	\$114,038	\$6,184	\$6,380	\$6,572	\$6,766	\$6,960	\$7,152	\$7,349	\$7,553	\$7,761	\$7,979	\$8,203	\$8,433	\$8,670	\$9,163

Sources and Notes:

See Table I for actual and projected inflation rates used.

[B]: Multiplier intended to capture labor costs beyond salary, such as fringe benefits and office costs.

[D]=Σ(Year 1 to Year 15).

[1]: Estimated based on public and private school enrollment data from the National Center for Education Statistics and the assumption that approximately 25% of students have more intensive needs due to the opioid crisis. The recommended student-social worker ratio is lower for students with intensive needs. National Association of Social Workers, Standards for School Social Work Services (2012) at p.18: "School social work services should be provided at a ratio of one school social worker to each school building serving up to 250 general education students, or a ratio of 1:250 students. When a school social worker is providing services to students with intensive needs, a lower ratio, such as 1:50, is suggested."

[2]: Salary estimated based on the salary range for school counselors in the Akron area reported by Glassdoor.

[3]: $[3A] = ([1] * [2]) / 10^3$. Year 1 onwards grown at projected employment cost inflation.

[4] = $[3] * [B]$.

[5]: Estimate based on SAMSHA/HHS study, which found that Youth Substance Abuse Prevention Programs cost on average \$52/pupil for materials and training. SAMSHA/HHS, "Substance Abuse Prevention Dollars and Cents: A Cost-Benefit Analysis," Table A4: Estimated Program Costs by Component (in 2002 dollars).

[6]: Public and private school enrollment data from the National Center for Education Statistics.

[7]: $[7C] = ([5] * [6]) / 10^3$. Year 1 onwards grown at projected inflation.

[8] = $[4] + [7]$.

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Table C.14

Estimated Cost of Medical Provider Education and Outreach, Cuyahoga County

			Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15
			2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
	<i>Education staffing requirements</i>	<i>2019\$ [A]</i>															
[1]	FTEs for medical provider outreach	3															
[2]	FTE salary estimate	\$66,000															
[3]	Salary cost (\$000s)	\$185	\$191	\$198	\$205	\$211	\$218	\$225	\$232	\$239	\$246	\$253	\$261	\$269	\$277	\$286	\$294

Sources and Notes:

See Table I for actual and projected inflation rates used.

[B]: Multiplier intended to capture labor costs beyond salary, such as fringe benefits and office costs.

[C]=Σ(Year 1 to Year 15).

[1]: Based on # of FTEs in county reported by Ohio Development Services Agency; assumption that ~10% of physicians will be targeted for education; and study of academic detailing visits (Barth, Ball, Adams, et al. (2017)).

[2]: Salary estimated based on Cuyahoga County salary data for comparable employee types. CUYAH_002426286.

[3]: [3A]=([1]*[2])/10^3. Year 1 onwards grown at projected employment cost inflation.

[4]=[3]*[B].

[5]=[4].

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Table S.14

Estimated Cost of Medical Provider Education and Outreach, Summit County

			Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15
			2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
	<i>Education staffing requirements</i>	<i>2019\$ [A]</i>															
[1]	FTEs for medical provider outreach	1															
[2]	FTE salary estimate	<u>\$66,000</u>															
[3]	Salary cost (\$000s)	<u>\$53</u>	\$55	\$57	\$59	\$60	\$62	\$64	\$66	\$68	\$70	\$72	\$75	\$77	\$79	\$82	\$84
		<i>Labor Cost</i>															
	<i>Estimated employment cost</i>	<i>Multiplier [B]</i>															
[4]	FTE employment cost, base case (\$000s)	1.75x	\$96	\$99	\$102	\$106	\$109	\$112	\$116	\$119	\$123	\$127	\$131	\$135	\$139	\$143	\$147
	<i>Total cost of recruitment</i>	<i>2020-2034 [C]</i>															
[5]	Base case (\$000s)	<u>\$1,803</u>	\$96	\$99	\$102	\$106	\$109	\$112	\$116	\$119	\$123	\$127	\$131	\$135	\$139	\$143	\$147

Sources and Notes:

See Table I for actual and projected inflation rates used.

[B]: Multiplier intended to capture labor costs beyond salary, such as fringe benefits and office costs.

[C]=Σ(Year 1 to Year 15).

[1]: Based on # of FTEs in county reported by Ohio Development Services Agency; assumption that ~10% of physicians will be targeted for education; and study of academic detailing visits (Barth, Ball, Adams, et al. (2017)).

[2]=Table C.14[2].

[3]: [3A]=([1]*[2])/10^3. Year 1 onwards grown at projected employment cost inflation.

[4]=[3]*[B].

[5]=[4].

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Table C.15

Estimated Cost of Drug Disposal Programs, Cuyahoga County

		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15
		2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
	<i>Drug disposal sites</i>															
	<i>2019\$ [A]</i>															
[1]	Current number of disposal sites	64														
[2]	Proposed program expansion	50.0%														
[3]	Proposed number of disposal sites	96														
[4]	Annual operating cost per disposal site	\$3,000														
[5]	Annual program cost (\$000s)	\$288	\$295	\$303	\$311	\$319	\$326	\$334	\$341	\$349	\$357	\$366	\$375	\$384	\$393	\$402
[6]	1x cost of program expansion (\$000s)	\$27	\$28													\$412
	<i>Take-back event costs</i>															
	<i>2019\$ [B]</i>															
[7]	Number of drug take back events	48														
[8]	Cost per drug take back event	\$2,250														
[9]	Take-back event costs (\$000s)	\$108	\$112	\$116	\$120	\$124	\$127	\$131	\$135	\$139	\$144	\$148	\$153	\$157	\$162	\$167
																\$172
[10]	FTEs to coordinate events	1														
[11]	FTE salary estimate	\$55,500														
[12]	Salary cost (\$000s)	\$56	\$57	\$60	\$61	\$63	\$65	\$67	\$70	\$72	\$74	\$76	\$78	\$81	\$83	\$86
																\$88
	<i>Labor Cost</i>															
	<i>Multiplier [C]</i>															
[13]	FTE employment cost, base case (\$000s)	1.75x	\$101	\$104	\$108	\$111	\$115	\$118	\$122	\$125	\$129	\$133	\$137	\$141	\$146	\$150
																\$155
[14]	Opioid % of medication take-backs	66%	66%	66%	66%	66%	66%	66%	66%	66%	66%	66%	66%	66%	66%	66%
	<i>Total cost of disposal programs</i>															
	<i>2020-2034 [D]</i>															
[15]	Base case (\$000s)	\$6,136	\$354	\$345	\$355	\$365	\$375	\$385	\$395	\$405	\$416	\$427	\$439	\$450	\$462	\$475
																\$488

Sources and Notes:

See Table I for actual and projected inflation rates used.

[C]: Multiplier intended to capture labor costs beyond salary, such as fringe benefits and office costs.

[D]=Σ(Year 1 to Year 15).

[2]: A GAO report (GAO-18-25, October 2017) found that only 3% of pharmacies and other entities eligible to collect unused Rx drugs for disposal have volunteered to do so.

[3]=[1]*(1+[2]).

[4]: King County, WA estimated the cost of drug disposal program was \$7,188 per site (2018\$). Other disposal programs have indicated the cost per site is in the range of \$1,300 to \$2,800 (2018\$).

[5]: [5A]=([3]*[4])/10^3. Year 1 onwards grown at projected inflation.

[6]: [6A]=([3]-[1])*\$850 (cost of steel drug disposal boxes sold by NADDI). Year 1 grown at projected inflation.

[7]: Assumes one event per week, excluding holidays.

[8]: Average event cost of \$2,000 + average drug disposal cost of \$250 per event.

[9]: [9B]=([7]*[8])/10^3. Year 1 onwards grown at projected inflation.

[11]: Salary estimated based on Cuyahoga County salary data for comparable employee types. CUYAH_002426286.

[12]=([10]*[11])/10^3. Year 1 onwards grown at projected employment cost inflation.

[13]=[12]*[C].

[14]: Based on study finding that 66% of medications returned in take-back initiatives were opioids between 2011 and 2015. Jaramillo-Stametz, Stewart, Ochs et al. (2018).

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[15]=[14]*([5]+[6]+[9]+[13]).

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Table S.15

Estimated Cost of Drug Disposal Programs, Summit County

		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15
		2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
	<i>Drug disposal sites</i>															
	<i>2019\$ [A]</i>															
[1]	Current number of disposal sites	20														
[2]	Proposed program expansion	50.0%														
[3]	Proposed number of disposal sites	30														
[4]	Annual operating cost per disposal site	\$3,000														
[5]	Annual program cost (\$000s)	\$90	\$92	\$95	\$97	\$100	\$102	\$104	\$107	\$109	\$112	\$114	\$117	\$120	\$123	\$126
[6]	1x cost of program expansion (\$000s)	\$9	\$9													\$129
	<i>Take-back event costs</i>															
	<i>2019\$ [B]</i>															
[7]	Number of drug take back events	48														
[8]	Cost per drug take back event	\$2,250														
[9]	Take-back event costs (\$000s)	\$108	\$112	\$116	\$120	\$124	\$127	\$131	\$135	\$139	\$144	\$148	\$153	\$157	\$162	\$167
																\$172
[10]	FTEs to coordinate events	1														
[11]	FTE salary estimate	\$55,500														
[12]	Salary cost (\$000s)	\$56	\$57	\$60	\$61	\$63	\$65	\$67	\$70	\$72	\$74	\$76	\$78	\$81	\$83	\$86
																\$88
	<i>Labor Cost</i>															
	<i>Multiplier [C]</i>															
[13]	FTE employment cost, base case (\$000s)	1.75x	\$101	\$104	\$108	\$111	\$115	\$118	\$122	\$125	\$129	\$133	\$137	\$141	\$146	\$150
																\$155
[14]	Opioid % of medication take-backs	66%	66%	66%	66%	66%	66%	66%	66%	66%	66%	66%	66%	66%	66%	66%
	<i>Total cost of disposal programs</i>															
	<i>2020-2034 [D]</i>															
[15]	Base case (\$000s)	\$3,733	\$207	\$208	\$214	\$221	\$227	\$233	\$240	\$247	\$254	\$261	\$269	\$276	\$284	\$292
																\$301

Sources and Notes:

See Table I for actual and projected inflation rates used.

[C]: Multiplier intended to capture labor costs beyond salary, such as fringe benefits and office costs.

[D]=Σ(Year 1 to Year 15).

[2]: A GAO report (GAO-18-25, October 2017) found that only 3% of pharmacies and other entities eligible to collect unused Rx drugs for disposal have volunteered to do so.

[3]=[1]*(1+[2]).

[4]: King County, WA estimated the cost of drug disposal program was \$7,188 per site (2018\$). Other disposal programs have indicated the cost per site is in the range of \$1,300 to \$2,800 (2018\$).

[5]: [5A]=([3]*[4])/10^3. Year 1 onwards grown at projected inflation.

[6]: [6A]=([3]-[1])*\$850 (cost of steel drug disposal boxes sold by NADDI). Year 1 grown at projected inflation.

[7]: Assumes one event per week, excluding holidays.

[8]: Average event cost of \$2,000 + average drug disposal cost of \$250 per event.

[9]: [9B]=([7]*[8])/10^3. Year 1 onwards grown at projected inflation.

[11]=Table C.15[11].

[12]=([10]*[11])/10^3. Year 1 onwards grown at projected employment cost inflation.

[13]=[12]*[C].

[14]: Based on study finding that 66% of medications returned in take-back initiatives were opioids between 2011 and 2015. Jaramillo-Stametz, Stewart, Ochs et al. (2018).

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[15]=[14]*([5]+[6]+[9]+[13])).

Table C.16

Estimated Cost of Law Enforcement Interventions, Cuyahoga County

		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15
		2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
	<i>Law enforcement staffing requirements</i>	<i>2019\$ [A]</i>														
[1]	Detectives investigating overdoses	25														
[2]	FTE salary estimate	\$63,000														
[3]	Salary cost (\$000s)	\$1,575	\$1,631	\$1,689	\$1,745	\$1,802	\$1,858	\$1,915	\$1,974	\$2,034	\$2,096	\$2,160	\$2,226	\$2,293	\$2,363	\$2,510
[4]	County prosecutors	100														
[5]	Opioid-related % of charges	11.0%														
[6]	FTE salary estimate	\$55,500														
[7]	Salary cost (\$000s)	\$608	\$630	\$652	\$674	\$696	\$718	\$740	\$762	\$785	\$809	\$834	\$860	\$886	\$913	\$969
	<i>Labor Cost</i>															
	<i>Estimated employment cost</i>	<i>Multiplier [B]</i>														
[8]	FTE employment cost, base case (\$000s)	1.75x	\$3,956	\$4,096	\$4,233	\$4,371	\$4,508	\$4,646	\$4,788	\$4,934	\$5,084	\$5,239	\$5,399	\$5,564	\$5,733	\$6,089
	<i>Total cost of recruitment</i>	<i>2020-2034 [C]</i>														
[9]	Base case (\$000s)	\$74,548	\$3,956	\$4,096	\$4,233	\$4,371	\$4,508	\$4,646	\$4,788	\$4,934	\$5,084	\$5,239	\$5,399	\$5,564	\$5,733	\$6,089

Sources and Notes:

See Table I for actual and projected inflation rates used.

[B]: Multiplier intended to capture labor costs beyond salary, such as fringe benefits and office costs.

[C]=Σ(Year 1 to Year 15).

[1]: Officers working in heroin-involved death investigation (HIDI) unit (5 officers currently staffed + 20 additional officers required). See Deposition of Gary Gingell, November 20, 2018, pp. 243-244.

[2]: Based on 2019 budget salary range for Patrol Officer I position in Cleveland Division of Police.

[3]: [3A]=([1]*[2])/10^3. Year 1 onwards grown at projected employment cost inflation.

[4]: Approximate # of attorneys employed in the Criminal Division of the Cuyahoga County Office of the Prosecutor.

[5]: 2017 opioid-related % of charges for Cuyahoga County Office of the Prosecutor, see Cutler Report, Table III.4[3].

[6]: Based on salary disclosed in job posting for Assistant Prosecuting Attorney position in Cuyahoga County Office of the Prosecutor in February 2019.

[7]: [7A]=([4]*[5]*[6])/10^3. Year 1 onwards grown at projected employment cost inflation.

[8]=([3]+[7A])*[B].

[9]=[8].

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Table S.16

Estimated Cost of Law Enforcement Interventions, Summit County

		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15
		2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
<i>Law enforcement staffing requirements</i>		<i>2019\$ [A]</i>														
[1]	Detectives investigating overdoses	4														
[2]	FTE salary estimate	\$59,000														
[3]	Salary cost (\$000s)	\$236	\$244	\$253	\$261	\$270	\$278	\$287	\$296	\$305	\$314	\$324	\$333	\$344	\$354	\$376
[4]	County prosecutors	29														
[5]	Opioid-related % of crimes	11.8%														
[6]	FTE salary estimate	\$56,000														
[7]	Salary cost (\$000s)	\$192	\$199	\$206	\$213	\$220	\$226	\$233	\$241	\$248	\$255	\$263	\$271	\$280	\$288	\$306
<i>Labor Cost</i>																
<i>Estimated employment cost</i>		<i>Multiplier [B]</i>														
[8]	FTE employment cost, base case (\$000s)	1.75x	\$775	\$803	\$830	\$857	\$884	\$911	\$938	\$967	\$997	\$1,027	\$1,058	\$1,091	\$1,124	\$1,193
<i>Total cost of recruitment</i>		<i>2020-2034 [C]</i>														
[9]	Base case (\$000s)	\$14,612	\$775	\$803	\$830	\$857	\$884	\$911	\$938	\$967	\$997	\$1,027	\$1,058	\$1,091	\$1,124	\$1,193

Sources and Notes:

See Table I for actual and projected inflation rates used.

[B]: Multiplier intended to capture labor costs beyond salary, such as fringe benefits and office costs.

[C]=Σ(Year 1 to Year 15).

[1]: Officers working on heroin-involved death investigations (2 officers currently staff plus 2 additional officers required). See AKRON_001121745.

[2]: Based on salary range disclosed in job posting for Police Officer position in Akron Police Division in February 2019.

[3]: [3A]=([1]*[2])/10^3. Year 1 onwards grown at projected employment cost inflation.

[4]: Approximate # of prosecutors employed in the Criminal Division of the Summit County Prosecutor. Summit County 2019 Operating Budget at p. 282.

[5]: 2017 opioid-related % of crimes for Summit County Office of the Prosecutor, see Cutler Report, Table III.4[9].

[6]: Based on salary range disclosed in job posting for Assistant Prosecutor position in Summit County Prosecutor.

[7]: [7A]=([4]*[5]*[6])/10^3. Year 1 onwards grown at projected employment cost inflation.

[8]=([3]+[7])*[B].

[9]=[8].

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Table C.17

Estimated Cost of Tracking Abatement Progress, Cuyahoga County

			Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15
			2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
	<i>Increase medical examiner staffing</i>	<i>2019\$ [A]</i>															
[1]	Forensic scientist FTEs	3															
[2]	FTE salary estimate	\$50,000															
[3]	Salary cost (\$000s)	\$150	\$155	\$161	\$166	\$172	\$177	\$182	\$188	\$194	\$200	\$206	\$212	\$218	\$225	\$232	\$239
[4]	Autopsy technician FTEs	1															
[5]	FTE salary estimate	\$45,000															
[6]	Salary cost (\$000s)	\$45	\$47	\$48	\$50	\$51	\$53	\$55	\$56	\$58	\$60	\$62	\$64	\$66	\$68	\$70	\$72
		<i>Labor Cost</i>															
	<i>Estimated employment cost</i>	<i>Multiplier [B]</i>															
[7]	FTE employment cost, base case (\$000s)	1.75x	\$353	\$366	\$378	\$390	\$403	\$415	\$428	\$441	\$454	\$468	\$482	\$497	\$512	\$528	\$544
	<i>Total cost of recruitment</i>	<i>2020-2034 [C]</i>															
[8]	Base case (\$000s)	\$6,658	\$353	\$366	\$378	\$390	\$403	\$415	\$428	\$441	\$454	\$468	\$482	\$497	\$512	\$528	\$544

Sources and Notes:

See Table I for actual and projected inflation rates used.

[B]: Multiplier intended to capture labor costs beyond salary, such as fringe benefits and office costs.

[C]=Σ(Year 1 to Year 15).

[1]-[2], [4]-[5]: Based on 2018 personnel cost commitments for heroin/fentanyl crisis as reported by Cuyahoga County Medical Examiner's Office. CUYAH_001633454-55.

[3]: [3A]=([1]*[2])/10^3. Year 1 onwards grown at projected employment cost inflation.

[6]: [6A]=([4]*[5])/10^3. Year 1 onwards grown at projected employment cost inflation.

[7]=([3]+[6])*[B].

[8]=[7].

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Table S.17

Estimated Cost of Tracking Abatement Progress, Summit County

			Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15
			2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
	<i>Increase medical examiner staffing</i>	<i>2019\$ [A]</i>															
[1]	Forensic scientist FTEs	1															
[2]	FTE salary estimate	\$50,000															
[3]	Salary cost (\$000s)	\$50	\$52	\$54	\$55	\$57	\$59	\$61	\$63	\$65	\$67	\$69	\$71	\$73	\$75	\$77	\$80
[4]	Autopsy technician FTEs	1															
[5]	FTE salary estimate	\$45,000															
[6]	Salary cost (\$000s)	\$45	\$47	\$48	\$50	\$51	\$53	\$55	\$56	\$58	\$60	\$62	\$64	\$66	\$68	\$70	\$72
		<i>Labor Cost</i>															
	<i>Estimated employment cost</i>	<i>Multiplier [B]</i>															
[7]	FTE employment cost, base case (\$000s)	1.75x	\$172	\$178	\$184	\$190	\$196	\$202	\$208	\$215	\$221	\$228	\$235	\$242	\$249	\$257	\$265
	<i>Total cost of recruitment</i>	<i>2020-2034 [D]</i>															
[8]	Base case (\$000s)	\$3,244	\$172	\$178	\$184	\$190	\$196	\$202	\$208	\$215	\$221	\$228	\$235	\$242	\$249	\$257	\$265

Sources and Notes:

See Table I for actual and projected inflation rates used.

[B]: Multiplier intended to capture labor costs beyond salary, such as fringe benefits and office costs.

[C]=Σ(Year 1 to Year 15).

[2]=Table C.17[2].

[3]: [3A]=([1]*[2])/10^3. Year 1 onwards grown at projected employment cost inflation.

[5]=Table C.17[5].

[6]: [6A]=([4]*[5])/10^3. Year 1 onwards grown at projected employment cost inflation.

[7]=([3]+[6])*[B].

[8]=[7].

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Table C.18

Estimated Cost of Court System Resources, Cuyahoga County

			Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15
			2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
	<i>Staff court systems</i>	<i>2019\$ [A]</i>															
[1]	FTEs required for system coordination	2															
[2]	FTE salary estimate	<u>\$73,500</u>															
[3]	Salary cost (\$000s)	<u>\$147</u>	\$152	\$158	\$163	\$168	\$173	\$179	\$184	\$190	\$196	\$202	\$208	\$214	\$221	\$227	\$234
		<i>Labor Cost</i>															
	<i>Estimated employment cost</i>	<i>Multiplier [B]</i>															
[4]	FTE employment cost, base case (\$000s)	1.75x	\$266	\$276	\$285	\$294	\$304	\$313	\$322	\$332	\$342	\$353	\$364	\$375	\$386	\$398	\$410
	<i>Total cost of recruitment</i>	<i>2020-2034 [C]</i>															
[5]	Base case (\$000s)	\$5,019	\$266	\$276	\$285	\$294	\$304	\$313	\$322	\$332	\$342	\$353	\$364	\$375	\$386	\$398	\$410

Sources and Notes:

See Table I for actual and projected inflation rates used.

[B]: Multiplier intended to capture labor costs beyond salary, such as fringe benefits and office costs.

[C]=Σ(Year 1 to Year 15).

[1]: Assumes 1 FTE staffed at Cuyahoga County Common Pleas Court and 1 FTE staffed at Cleveland Municipal Court.

[2]: Salary estimated based on Cuyahoga County salary data for comparable employee types. CUYAH_002426286.

[3]: [3A]=([1]*[2])/10^3. Year 1 onwards grown at projected employment cost inflation.

[4]=[3]*[B].

[5]=[4].

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Table S.18

Estimated Cost of Court System Resources, Summit County

			Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15
			2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
	<i>Staff court systems</i>	<i>2019\$ [A]</i>															
[1]	FTEs required for system coordination	2															
[2]	FTE salary estimate	<u>\$73,500</u>															
[3]	Salary cost (\$000s)	<u>\$147</u>	\$152	\$158	\$163	\$168	\$173	\$179	\$184	\$190	\$196	\$202	\$208	\$214	\$221	\$227	\$234
		<i>Labor Cost</i>															
	<i>Estimated employment cost</i>	<i>Multiplier [B]</i>															
[4]	FTE employment cost, base case (\$000s)	1.75x	\$266	\$276	\$285	\$294	\$304	\$313	\$322	\$332	\$342	\$353	\$364	\$375	\$386	\$398	\$410
	<i>Total cost of recruitment</i>	<i>2020-2034 [C]</i>															
[5]	Base case (\$000s)	\$5,019	\$266	\$276	\$285	\$294	\$304	\$313	\$322	\$332	\$342	\$353	\$364	\$375	\$386	\$398	\$410

Sources and Notes:

See Table I for actual and projected inflation rates used.

[B]: Multiplier intended to capture labor costs beyond salary, such as fringe benefits and office costs.

[C]=Σ(Year 1 to Year 15).

[1]: Assumes 1 FTE staffed at Summit County Court of Common Pleas and 1 FTE staffed at Akron Municipal Court.

[2]=Table C.18[2].

[3]: [3A]=([1]*[2])/10^3. Year 1 onwards grown at projected employment cost inflation.

[4]=[3]*[B].

[5]=[4].

Table C.19

Estimated Cost of Data-Informed Systems Re-Engineering & Management, Cuyahoga County

		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15
		2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
	<i>Team employment costs</i>															
	<i>2019\$ [A]</i>															
[1]	Executive director	1														
[2]	FTE salary estimate	\$122,400														
[3]	Salary cost (\$000s)	\$122	\$127	\$131	\$136	\$140	\$144	\$149	\$153	\$158	\$163	\$168	\$173	\$178	\$184	\$189
[4]	Program managers	2														
[5]	FTE salary estimate	\$76,000														
[6]	Salary cost (\$000s)	\$152	\$157	\$163	\$168	\$174	\$179	\$185	\$190	\$196	\$202	\$208	\$215	\$221	\$228	\$235
[7]	Data analyst	1														
[8]	FTE salary estimate	\$75,000														
[9]	Salary cost (\$000s)	\$75	\$78	\$80	\$83	\$86	\$88	\$91	\$94	\$97	\$100	\$103	\$106	\$109	\$113	\$116
[10]	Staff assistant	1														
[11]	FTE salary estimate	\$57,132														
[12]	Salary cost (\$000s)	\$57	\$59	\$61	\$63	\$65	\$67	\$69	\$72	\$74	\$76	\$78	\$81	\$83	\$86	\$88
	<i>Labor Cost</i>															
	<i>Estimated employment cost</i>															
	<i>Multiplier [B]</i>															
[13]	Employment cost, base case (\$000s)	1.75x	\$737	\$763	\$788	\$814	\$839	\$865	\$891	\$919	\$947	\$976	\$1,005	\$1,036	\$1,068	\$1,100
	<i>Total cost of team</i>															
	<i>2020-2034 [C]</i>															
[14]	Base case (\$000s)	\$13,881	\$737	\$763	\$788	\$814	\$839	\$865	\$891	\$919	\$947	\$976	\$1,005	\$1,036	\$1,068	\$1,100

Sources and Notes:

See Table I for actual and projected inflation rates used.

[B]: Multiplier intended to capture labor costs beyond salary, such as fringe benefits and office costs.

[C]=Σ(Year 1 to Year 15).

[2], [5], [8] and [11] based on Government Performance Lab (GPL) budget salaries.

[3]: [3A]=([1]*[2])/10^3. Year 1 onwards grown at projected employment cost inflation.

[6]: [6A]=([4]*[5])/10^3. Year 1 onwards grown at projected employment cost inflation.

[9]: [9A]=([7]*[8])/10^3. Year 1 onwards grown at projected employment cost inflation.

[12]: [12A]=([10]*[11])/10^3. Year 1 onwards grown at projected employment cost inflation.

[13]=([3]+[6]+[9]+[12])*[B].

[14]=[13].

Table S.19

Estimated Cost of Data-Informed Systems Re-Engineering & Management, Summit County

		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15
		2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
	<i>Team employment costs</i>															
	<i>2019\$ [A]</i>															
[1]	Executive director	1														
[2]	FTE salary estimate	\$122,400														
[3]	Salary cost (\$000s)	\$122	\$127	\$131	\$136	\$140	\$144	\$149	\$153	\$158	\$163	\$168	\$173	\$178	\$184	\$189
[4]	Program managers	2														
[5]	FTE salary estimate	\$76,000														
[6]	Salary cost (\$000s)	\$152	\$157	\$163	\$168	\$174	\$179	\$185	\$190	\$196	\$202	\$208	\$215	\$221	\$228	\$235
[7]	Data analyst	1														
[8]	FTE salary estimate	\$75,000														
[9]	Salary cost (\$000s)	\$75	\$78	\$80	\$83	\$86	\$88	\$91	\$94	\$97	\$100	\$103	\$106	\$109	\$113	\$116
[10]	Staff assistant	1														
[11]	FTE salary estimate	\$57,132														
[12]	Salary cost (\$000s)	\$57	\$59	\$61	\$63	\$65	\$67	\$69	\$72	\$74	\$76	\$78	\$81	\$83	\$86	\$88
	<i>Labor Cost</i>															
	<i>Estimated employment cost</i>															
	<i>Multiplier [B]</i>															
[13]	Employment cost, base case (\$000s)	1.75x	\$737	\$763	\$788	\$814	\$839	\$865	\$891	\$919	\$947	\$976	\$1,005	\$1,036	\$1,068	\$1,100
	<i>Total cost of team</i>															
	<i>2020-2034 [C]</i>															
[14]	Base case (\$000s)	\$13,881	\$737	\$763	\$788	\$814	\$839	\$865	\$891	\$919	\$947	\$976	\$1,005	\$1,036	\$1,068	\$1,100

Sources and Notes:

See Table I for actual and projected inflation rates used.

[B]: Multiplier intended to capture labor costs beyond salary, such as fringe benefits and office costs.

[C]=Σ(Year 1 to Year 15).

[2], [5], [8] and [11] based on Government Performance Lab (GPL) budget salaries.

[3]: [3A]=([1]*[2])/10^3. Year 1 onwards grown at projected employment cost inflation.

[6]: [6A]=([4]*[5])/10^3. Year 1 onwards grown at projected employment cost inflation.

[9]: [9A]=([7]*[8])/10^3. Year 1 onwards grown at projected employment cost inflation.

[12]: [12A]=([10]*[11])/10^3. Year 1 onwards grown at projected employment cost inflation.

[13]=([3]+[6]+[9]+[12])*[B].

[14]=[13].

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Notes	County	County Code	Yearly July 1st Estimates	Yearly July 1st Estimates Code	Population
	Cuyahoga County, OH	39035	2015	2015	1083660
	Cuyahoga County, OH	39035	2016	2016	1080868
	Cuyahoga County, OH	39035	2017	2017	1077588
Total	Cuyahoga County, OH	39035			3242116
	Summit County, OH	39153	2015	2015	466411
	Summit County, OH	39153	2016	2016	466052
	Summit County, OH	39153	2017	2017	467186
Total	Summit County, OH	39153			1399649
Total					4641765

Dataset: Bridged-Race Population Estimates 1990-2017

Query Parameters:

Age: 12 years; 13 years; 14 years; 15 years; 16 years; 17 years; 18 years; 19 years; 20 years; 21 years; 22 years; 23 years; 24 years; 25 years; 26 years; 27 years; 28 years; 29 years; 30 years; 31 years; 32 years; 33 years; 34 years; 35 years; 36 years; 37 years; 38 years; 39 years; 40 years; 41 years; 42 years; 43 years; 44 years; 45 years; 46 years; 47 years; 48 years; 49 years; 50 years; 51 years; 52 years; 53 years; 54 years; 55 years; 56 years; 57 years; 58 years; 59 years; 60 years; 61 years; 62 years; 63 years; 64 years; 65 years; 66 years; 67 years; 68 years; 69 years; 70 years; 71 years; 72 years; 73 years; 74 years; 75 years; 76 years; 77 years; 78 years; 79 years; 80 years; 81 years; 82 years; 83 years; 84 years; 85+ years

States: Cuyahoga County, OH (39035); Summit County, OH (39153)

Yearly July 1st Estimates: 2015; 2016; 2017

Group By: County; Yearly July 1st Estimates

Show Totals: True

Show Zero Values: False

Data Table: Default

Help: See <http://wonder.cdc.gov/wonder/help/bridged-race.html> for more information.

Query Date: Mar 14, 2019 3:43:09 PM

Suggested Citation: United States Department of Health and Human Services (US DHHS), Centers for Disease Control and Prevention (CDC), National Center for Health Statistics (NCHS), Bridged-Race Population Estimates, United States July 1st resident population by state, county, age, sex, bridged-race, and Hispanic origin. Compiled from 1990-1999 bridged-race intercensal population estimates (released by NCHS on 7/26/2004); revised bridged-race 2000-2009 intercensal population estimates (released by NCHS on 10/26/2012); and bridged-race Vintage 2017 (2010-2017) postcensal population estimates (released by NCHS on 6/27/2018). Available on CDC WONDER Online Database. Accessed at <http://wonder.cdc.gov/bridged-race-v2017.html> on Mar 14, 2019 3:43:09 PM

Footnotes:

1. Estimates for 1990-1999 are bridged-race intercensal population estimates of the July 1 resident population. Estimates for 2000-2009 are revised bridged-race intercensal estimates of the July 1 resident population. Estimates for 2010-2017 are bridged-race Vintage 2017 postcensal estimates of the July 1 resident population. These estimates were prepared by the Census Bureau in collaboration with NCHS.

Caveats:

1. County geography changes over time. New counties are created and old counties are deleted or their boundaries are modified. The county codes and names for years 1990-1999 are based on Census 2000 geography; those for year 2000 and later are based on Census 2010 geography.
2. The U.S. Census Bureau annually releases unbridged population estimates for five-year age groups and race at the county level (<http://www.census.gov/popest/research/eval-estimates/eval-est2010.html>). The Census Bureau does not release bridged-race or unbridged estimates by single year of age at the county level due to concerns about the reliability of these estimates. However, these estimates are provided to the National Center for Health Statistics to meet programmatic needs such as the creation of age groupings that differ from the standard groupings used by the Census Bureau. Users of the single-year-of-age county-level bridged race population estimates should carefully consider the limited reliability of these estimates.

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Alexandre et al. (2012)

	2010\$*	2010\$*	2018\$	2018\$	% Receiving	2018\$ w/ Detox	2018\$ w/ Detox	% Utilizing Recovery	2018\$ w/ Detox + Housing	2018\$ + Recov. House	% <i>Weights</i>
	(Median)	(Mean)	(Median)	(Mean)	Detox***	(Median)	(Mean)	Housing***	(Median)	(Mean)	***
Adult outpatient	\$3,874	\$27,359	\$4,874	\$34,422	50%	\$5,732	\$35,871	30%	\$6,434	\$36,573	10%
Intensive outpatient	\$7,371	\$23,776	\$9,274	\$29,914	50%	\$10,132	\$31,363	30%	\$10,834	\$32,065	30%
Parital hospitalization**	\$9,828	\$31,701	\$12,365	\$39,886	50%	\$13,223	\$41,334	30%	\$13,925	\$42,036	30%
Adult residential	\$11,397	\$18,427	\$14,339	\$23,184	50%	\$15,197	\$24,633	30%	\$15,899	\$25,335	30%
Detoxification	\$1,364	\$2,303	\$1,716	\$2,898							
Recovery Housing****								\$2,340			

Alexandre et al. (2012), The Economic Cost of Substance Abuse Treatment in the State of Florida

Cost per individual

\$12,841

\$33,488

\$23,165

*Economic cost per treatment episode

** Partial hospitalization assumed to 1/3 more expensive than intensive outpatient

*** Assumption.

**** \$39 per day (see SUMMIT_000956565) x 60 days

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	2017 Annual Report
Unit days of service in respite and residential treatment homes	7,881
Tenant days of supported housing	2,200
Compensation and Related Expenses	\$803,206
Contract and Professional Expenses	\$46,991
Food	\$40,014
Repairs, Furnishings and Maintenance	\$50,102
Utilities	\$30,847
Office & Other Expenses, Depreciation and Insurance	\$148,510
Total Expenses	\$1,119,670

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OTP clients receiving MAT	11,500		
Buprenorphine	2,473	21.5%	
Methadone	8,533	74.2%	
Naltrexone	495	4.3%	
Non-OTP clients receiving MAT	2,896		
Buprenorphine	2,349	81.1%	
Naltrexone	546	18.9%	
Total receiving MAT at facility	14,396		
Buprenorphine	4,822	33.5%	35.0%
Methadone	8,533	59.3%	55.0%
Naltrexone	1,041	7.2%	10.0%

"Treatment Options for Opioid Use Disorder in Ohio" (OhioMHAS presentation), September 2018

Ohio OTP average # of clients per day	11,500
% on methadone	74.2%
% on buprenorphine	21.5%
% on Vivitrol	4.3%

National Survey of Substance Abuse Treatment Treatment Services, 2017

Table 5.4a. Clients receiving medication-assisted opioid therapy provided at facilities with opioid treatment programs (OTPs) and non-OTP facilities, by facility operation: Number, March 31, 2017

OTP clients receiving MAT	413,930	100.0%
Buprenorphine	27,665	6.7%
Methadone	382,867	92.5%
Naltrexone	3,398	0.8%
Non-OTP clients receiving MAT	104,225	100.0%
Buprenorphine	84,558	81.1%
Naltrexone	19,667	18.9%

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	Months Since Entry									
	12	24	36	48	60	72	84	96	108	120
Price Reduction	-51%	-57%	-66%	-66%	-67%	-77%	-78%	-80%	-78%	-77%
	-51%	-6%	-9%	0%	-1%	-10%	-1%	-2%	2%	1%

Source:

<https://www.iqvia.com/-/media/iqvia/pdfs/institute-reports/price-declines-after-branded-medicines-lose-exclusivity-in-the-us.pdf>

IMS Institute for Healthcare Informatics

Price Declines after Branded Medicines Lose Exclusivity in the U.S.

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FTE salary estimate

\$66,185

Cuyahoga, 2017 salaries (CUYAH_002426286)

										FTE salary (2080 hrs/year)	
Agency	Job Code	Hourly Rate	YTD Reg Hours	YTD Reg Earning	YTD OT Hours	YTD OT Earnings	YTD Other Earn	Term?	Title	2017\$	2019\$
HHS	894	32.92	2080	65274.4	0	0	152.36		NURSE SUPERVISOR	\$68,474	\$72,661
HHS	894	28.76	2080	59776	0	0	0		NURSE SUPERVISOR	\$59,821	\$63,479
HHS	894	30.2	1825	55067.8	0	0	0		NURSE SUPERVISOR	\$62,816	\$66,658
HHS	894	28.76	2080	59664.8	0	0	956.24		NURSE SUPERVISOR	\$59,821	\$63,479
HHS	894	30.2	2062	62225.2	0	0	0		NURSE SUPERVISOR	\$62,816	\$66,658
HHS	894	28.76	2080	59776	0	0	0		NURSE SUPERVISOR	\$59,821	\$63,479
HHS	894	28.76	2000	57364	0	0	514.47		NURSE SUPERVISOR	\$59,821	\$63,479
HHS	894	29.5	2080	61313.6	0	0	0		NURSE SUPERVISOR	\$61,360	\$65,113
HHS	894	28.76	560	15949.6	0	0	2532.88	T	NURSE SUPERVISOR	\$59,821	\$63,479
HHS	892	33.24	600	19892	0	0	0	T	NURSING DIRECTOR	\$69,139	\$73,368

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FTE salary estimate - 24/7 hotline

\$35,723

Cuyahoga, 2017 salaries (CUYAH_002426286)

Cuyahoga, 2017 salaries (CUYAH_002426286)									FTE salary (2080 hrs/year)		
Agency	Job Code	Hourly Rate	YTD Reg Hours	YTD Reg Earning	YTD OT Hours	YTD OT Earnings	YTD Other Earn	Term?	Title	2017\$	2019\$
HHS	694	15.64	2077.5	31505.68	147.97	3276.99	692.06		CUSTOMER SERV AIDE	\$32,531	\$34,521
HHS	694	16.62	2080	33936	205.25	4737.03	705.23		CUSTOMER SERV AIDE	\$34,570	\$36,684
HHS	694	15.14	2074.5	30008.97	51.5	1088.77	639.98		CUSTOMER SERV AIDE	\$31,491	\$33,417
HHS	694	15.64	2079.92	31542.81	142.58	3195.39	729		CUSTOMER SERV AIDE	\$32,531	\$34,521
HHS	694	14.66	239.57	3488.9	6	131.94	23.2		CUSTOMER SERV AIDE	\$30,493	\$32,358
HHS	694	16.62	2080	33936	243.19	5975.4	960.53		CUSTOMER SERV AIDE	\$34,570	\$36,684
HHS	694	16.39	2080	33220.8	114.83	2722.04	694.01		CUSTOMER SERV AIDE	\$34,091	\$36,176
HHS	694	14.66	880	12692	50.5	1092.01	692.58		CUSTOMER SERV AIDE	\$30,493	\$32,358
HHS	694	14.84	204	3027.36	20	445.2	350.81	T	CUSTOMER SERV AIDE	\$30,867	\$32,755
HHS	694	16.62	2019	32939.68	0	0	874.98		CUSTOMER SERV AIDE	\$34,570	\$36,684
HHS	694	16.62	2074.37	33844.28	257.62	5857.6	712.5		CUSTOMER SERV AIDE	\$34,570	\$36,684
HHS	694	16.62	2080	33936	251.5	6247.77	713.46		CUSTOMER SERV AIDE	\$34,570	\$36,684
HHS	694	20.8	2080	42107.2	240.8	6643.69	779.42		CUSTOMER SERV AIDE	\$43,264	\$45,910
HHS	694	17.45	2080	35624	244.5	5544.64	721.01		CUSTOMER SERV AIDE	\$36,296	\$38,516
HHS	694	16.62	1956.99	31932.17	15	370.28	772.88		CUSTOMER SERV AIDE	\$34,570	\$36,684
HHS	694	16.62	2070	33770.46	228	5527.34	804.28		CUSTOMER SERV AIDE	\$34,570	\$36,684
HHS	694	17.45	2080	35624	134.5	3437.07	723.42		CUSTOMER SERV AIDE	\$36,296	\$38,516
HHS	694	15.14	2074.82	30500.64	217.76	4311.85	1022.43		CUSTOMER SERV AIDE	\$31,491	\$33,417
HHS	694	16.19	2080	32369.6	89.5	2082.55	1758.54		CUSTOMER SERV AIDE	\$33,675	\$35,735
HHS	694	16.62	2080	33936	254	6138.33	1997.67		CUSTOMER SERV AIDE	\$34,570	\$36,684
HHS	694	16.62	2080	33936	215	4995.2	707.25		CUSTOMER SERV AIDE	\$34,570	\$36,684
HHS	694	14.66	225	3277.62	8	175.92	159.72		CUSTOMER SERV AIDE	\$30,493	\$32,358
HHS	694	16.62	2080	33936	11	268.84	677.2		CUSTOMER SERV AIDE	\$34,570	\$36,684
HHS	694	15.14	2054.25	30132.92	158.25	3509.41	826.87		CUSTOMER SERV AIDE	\$31,491	\$33,417
HHS	694	15.14	1993.99	28774.55	8.33	142.42	630.56		CUSTOMER SERV AIDE	\$31,491	\$33,417
HHS	694	15.64	2080	31857.6	178	3930.04	777.04		CUSTOMER SERV AIDE	\$32,531	\$34,521
HHS	694	15.64	2080	31740	89.08	1925.95	928.31		CUSTOMER SERV AIDE	\$32,531	\$34,521
HHS	694	15.14	2079.5	30080.82	224.25	4630.14	732.48		CUSTOMER SERV AIDE	\$31,491	\$33,417
HHS	694	16.39	2080	33220.8	58.75	1380.98	671.93		CUSTOMER SERV AIDE	\$34,091	\$36,176
HHS	694	16.19	2080	33060.8	140.03	3054.77	779.12		CUSTOMER SERV AIDE	\$33,675	\$35,735
HHS	694	16.62	1751.49	28544.97	173.57	3910.59	400		CUSTOMER SERV AIDE	\$34,570	\$36,684
HHS	694	14.66	960	13841.6	35.25	762.89	1344.26		CUSTOMER SERV AIDE	\$30,493	\$32,358
HHS	694	16.62	2080	33936	214	5299.18	706.6		CUSTOMER SERV AIDE	\$34,570	\$36,684
HHS	694	16.62	2080	33936	248.25	5820.54	796.11		CUSTOMER SERV AIDE	\$34,570	\$36,684
HHS	694	16.62	2080	33936	44	1026.46	898.12		CUSTOMER SERV AIDE	\$34,570	\$36,684
HHS	694	14.37	240	3448.8	17	337.76	28.74	T	CUSTOMER SERV AIDE	\$29,890	\$31,718
HHS	694	17	2080	33856	203	5008.05	1271.99		CUSTOMER SERV AIDE	\$35,360	\$37,523
HHS	694	15.14	2080	30915.2	79	1710.31	707.27		CUSTOMER SERV AIDE	\$31,491	\$33,417

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APPENDIX D

Cuyahoga, 2017 salaries (CUYAH_002426286)

									FTE salary (2080 hrs/year)		
Agency	Job Code	Hourly Rate	YTD Reg Hours	YTD Reg Earning	YTD OT Hours	YTD OT Earnings	YTD Other Earn	Term?	Title	2017\$	2019\$
HHS	694	16.62	2080	33936	248	6162.72	712.48		CUSTOMER SERV AIDE	\$34,570	\$36,684
HHS	694	16.62	1992	32502.48	180	4140.19	887.97		CUSTOMER SERV AIDE	\$34,570	\$36,684
HHS	694	16.62	2077	33886.14	208.5	5099.54	709.22		CUSTOMER SERV AIDE	\$34,570	\$36,684
HHS	694	16.62	2080	33936	206.5	4741.08	1299.25		CUSTOMER SERV AIDE	\$34,570	\$36,684
HHS	694	16.62	1995.3	32546.67	146.5	3466.85	995.08		CUSTOMER SERV AIDE	\$34,570	\$36,684
HHS	694	16.07	1360	22092.8	45	1087.27	2373.54	T	CUSTOMER SERV AIDE	\$33,426	\$35,470
HHS	694	16.62	2080	33936	259.15	5725.6	1476.33		CUSTOMER SERV AIDE	\$34,570	\$36,684
HHS	694	14.66	240	3495.2	0	0	23.2		CUSTOMER SERV AIDE	\$30,493	\$32,358
HHS	694	15.64	2080	31857.6	112.92	2264.37	771.65		CUSTOMER SERV AIDE	\$32,531	\$34,521
HHS	694	16.62	2080	33936	215	5227.43	710.03		CUSTOMER SERV AIDE	\$34,570	\$36,684
HHS	694	16.62	2080	33936	227	5584.28	709.54		CUSTOMER SERV AIDE	\$34,570	\$36,684
HHS	694	15.14	2080	30125.6	290.5	6272.8	800.36		CUSTOMER SERV AIDE	\$31,491	\$33,417
HHS	694	16.62	2080	33936	13	293.27	726.07		CUSTOMER SERV AIDE	\$34,570	\$36,684
HHS	694	15.14	2080	30614.4	218.41	4411.93	748.83		CUSTOMER SERV AIDE	\$31,491	\$33,417
HHS	694	16.62	2071.23	33793.14	180.75	4405.15	710.28		CUSTOMER SERV AIDE	\$34,570	\$36,684
HHS	694	16.62	2080	33936	116.83	2547.51	848.65		CUSTOMER SERV AIDE	\$34,570	\$36,684
HHS	694	16.62	2080	33936	92.75	2256.92	1106.13		CUSTOMER SERV AIDE	\$34,570	\$36,684
HHS	694	17.45	2080	35624	227.67	5370.16	730.71		CUSTOMER SERV AIDE	\$36,296	\$38,516
HHS	694	14.66	240	3495.2	6	131.94	23.2		CUSTOMER SERV AIDE	\$30,493	\$32,358
HHS	694	16.62	2057.5	33566.84	54.25	1073.23	672.42		CUSTOMER SERV AIDE	\$34,570	\$36,684
HHS	694	16.62	2080	33936	3.25	61.09	677.2		CUSTOMER SERV AIDE	\$34,570	\$36,684
HHS	694	16.62	2080	33936	243.5	5836.77	712.48		CUSTOMER SERV AIDE	\$34,570	\$36,684
HHS	694	21.51	2036.32	42300.04	144	4422.07	786.53		CUSTOMER SERV AIDE	\$44,741	\$47,477
HHS	694	16.62	2080	33936	58.62	1367.89	834.12		CUSTOMER SERV AIDE	\$34,570	\$36,684
HHS	694	14.66	960	13841.6	12	260.87	635.01		CUSTOMER SERV AIDE	\$30,493	\$32,358
HHS	694	15.64	2079.25	31846.1	161.75	3601.14	853.86		CUSTOMER SERV AIDE	\$32,531	\$34,521
HHS	694	14.66	1584	22803.84	68.83	1486.98	657.72		CUSTOMER SERV AIDE	\$30,493	\$32,358
HHS	694	16.29	728	11859.12	93	2088.9	2930.94	T	CUSTOMER SERV AIDE	\$33,883	\$35,955
HHS	694	16.62	2080	33936	18	423.62	713.7		CUSTOMER SERV AIDE	\$34,570	\$36,684
HHS	694	16.62	2080	33936	5.5	109.97	677.45		CUSTOMER SERV AIDE	\$34,570	\$36,684
HHS	694	16.62	2080	33936	52	1181.73	678.93		CUSTOMER SERV AIDE	\$34,570	\$36,684
HHS	694	14.37	640	9196.8	119	2353.54	59.4	T	CUSTOMER SERV AIDE	\$29,890	\$31,718
HHS	694	16.39	2080	33188.8	260.79	6297.11	703.54		CUSTOMER SERV AIDE	\$34,091	\$36,176
HHS	694	15.14	2075.9	30029.08	57.5	1097.71	623.21		CUSTOMER SERV AIDE	\$31,491	\$33,417
HHS	694	16.62	2075	33854.55	148	3259.04	801.93		CUSTOMER SERV AIDE	\$34,570	\$36,684
HHS	694	16.62	2080	33936	0	0	2963.12		CUSTOMER SERV AIDE	\$34,570	\$36,684
HHS	694	14.66	1470.25	21173.89	29.79	603.99	1269.48		CUSTOMER SERV AIDE	\$30,493	\$32,358
HHS	694	16.62	1947.5	31735.34	225.5	5197.71	4288.62	T	CUSTOMER SERV AIDE	\$34,570	\$36,684
HHS	694	16.62	2079.84	33933.37	16.75	382.88	680.85		CUSTOMER SERV AIDE	\$34,570	\$36,684
HHS	694	15.14	2080	30501.6	202.5	4375.7	748.11		CUSTOMER SERV AIDE	\$31,491	\$33,417

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APPENDIX D

Cuyahoga, 2017 salaries (CUYAH_002426286)

Cuyahoga, 2017 salaries (CUYAH_002426286)									FTE salary (2080 hrs/year)		
Agency	Job Code	Hourly Rate	YTD Reg Hours	YTD Reg Earning	YTD OT Hours	YTD OT Earnings	YTD Other Earn	Term?	Title	2017\$	2019\$
HHS	694	17.45	1912.53	32760.27	19.51	397.76	678.29		CUSTOMER SERV AIDE	\$36,296	\$38,516
HHS	694	17.45	2072	35487.2	195.67	4883.56	766.94		CUSTOMER SERV AIDE	\$36,296	\$38,516
HHS	694	16.62	2080	33936	240	5910.15	1506.24		CUSTOMER SERV AIDE	\$34,570	\$36,684
HHS	694	16.62	2080	33936	0	0	677.2		CUSTOMER SERV AIDE	\$34,570	\$36,684
HHS	694	14.66	866.5	12498.01	50	1033.01	623.75		CUSTOMER SERV AIDE	\$30,493	\$32,358
HHS	694	16.62	2088	34066.32	234.5	5735.1	711.2		CUSTOMER SERV AIDE	\$34,570	\$36,684
HHS	694	15.14	2032	29398.24	196	4039.91	793.34		CUSTOMER SERV AIDE	\$31,491	\$33,417
HHS	694	16.62	2080	33936	222.33	5388.12	706.48		CUSTOMER SERV AIDE	\$34,570	\$36,684
HHS	694	15.14	2080	30125.6	242.05	5074.12	1013.27		CUSTOMER SERV AIDE	\$31,491	\$33,417
HHS	694	14.66	875.98	12634.09	48	1018.2	624.96		CUSTOMER SERV AIDE	\$30,493	\$32,358
HHS	694	16.29	560	9122.4	12	293.28	759.11	T	CUSTOMER SERV AIDE	\$33,883	\$35,955
HHS	694	16.62	2020.84	32959.91	109.92	2466.82	848.67		CUSTOMER SERV AIDE	\$34,570	\$36,684
HHS	694	16.62	2080	33936	53.67	1313.65	824.88		CUSTOMER SERV AIDE	\$34,570	\$36,684
HHS	694	14.66	880	12692	47	1005.98	629.12		CUSTOMER SERV AIDE	\$30,493	\$32,358
HHS	694	15.64	2036.42	30891.88	129.87	2659.96	766.66		CUSTOMER SERV AIDE	\$32,531	\$34,521
HHS	694	16.62	2080	33936	201.12	4802.18	1196.13		CUSTOMER SERV AIDE	\$34,570	\$36,684
HHS	694	14.37	527.25	7576.59	34.95	631.65	28.02	T	CUSTOMER SERV AIDE	\$29,890	\$31,718
HHS	694	14.66	1360	19589.6	67.66	1360.77	669.26		CUSTOMER SERV AIDE	\$30,493	\$32,358
HHS	694	16.62	2080	33936	249.5	6191.24	712.73		CUSTOMER SERV AIDE	\$34,570	\$36,684
HHS	694	16.62	2080	33936	2	32.58	677.2		CUSTOMER SERV AIDE	\$34,570	\$36,684
HHS	694	16.62	2080	33936	218.5	5372.47	714.31		CUSTOMER SERV AIDE	\$34,570	\$36,684
HHS	694	17.1	740	12563.6	0	0	327.75	T	CUSTOMER SERV AIDE	\$35,568	\$37,743
HHS	694	17.45	1766	30254.6	95.75	2101.15	954.34		CUSTOMER SERV AIDE	\$36,296	\$38,516
HHS	694	17.45	1953	33449.15	3	51.3	1010.49		CUSTOMER SERV AIDE	\$36,296	\$38,516
HHS	694	17.45	2080	35624	120.29	2850.24	722.17		CUSTOMER SERV AIDE	\$36,296	\$38,516

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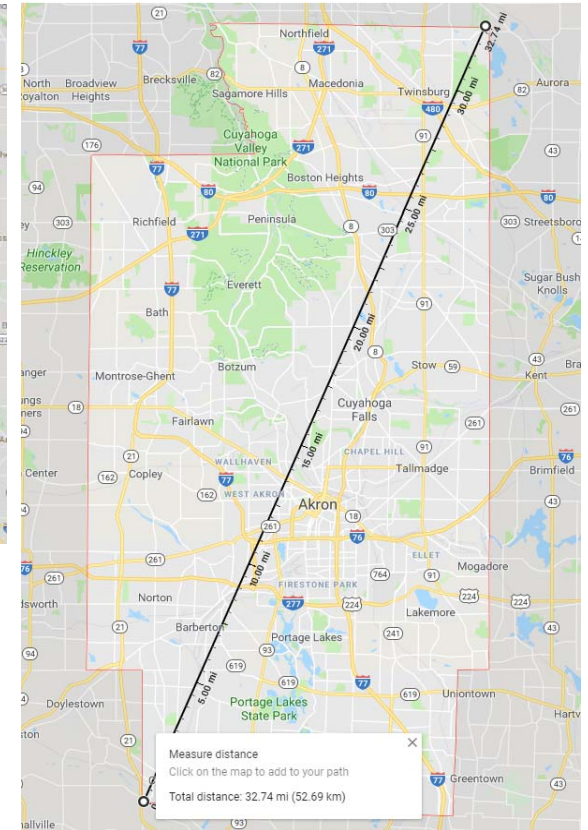
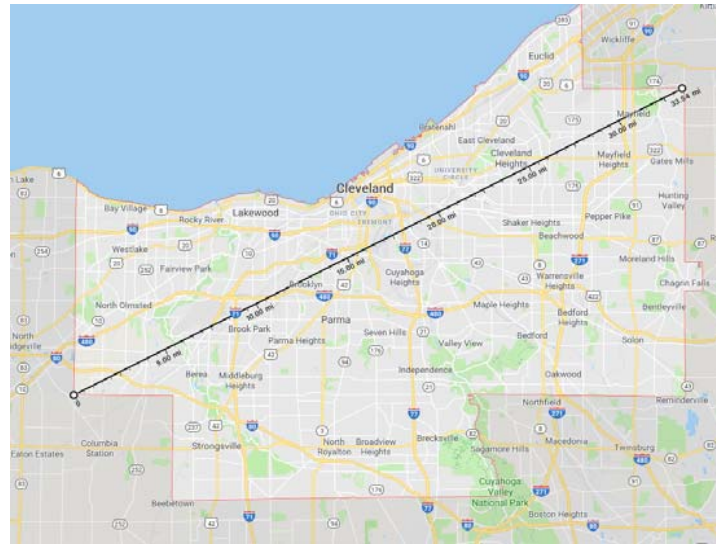
APPENDIX D

UberX prices (Cleveland)

	Cleveland	Akron
Base Fare	\$1.05	\$1.00
Per Minute	\$0.17	\$0.14
Per Mile	\$0.80	\$0.93
Service Fee	\$2.80	\$3.00
Minimum Fare	\$6.80	\$5.00

<http://uberestimate.com/prices/Cleveland/>
<https://uberestimator.com/cities/akron>

Minimum fare round trip	\$13.60	\$10.00
14 mile round trip fare	\$18.90	\$21.02
30 mile round trip fare	\$31.70	\$35.90
Average round trip fare	\$21.40	\$22.31



ALL OPIOIDS

Notes	County	County Code	Year	Year Code	Deaths	Population	Crude Rate
	Cuyahoga County, OH	39035	2013	2013	223	1263154	17.7
	Cuyahoga County, OH	39035	2014	2014	234	1259828	18.6
	Cuyahoga County, OH	39035	2015	2015	245	1255921	19.5
	Cuyahoga County, OH	39035	2016	2016	504	1249352	40.3
	Cuyahoga County, OH	39035	2017	2017	524	1248514	42
Total	Cuyahoga County, OH	39035			1730	6276769	27.6
	Summit County, OH	39153	2013	2013	56	541824	10.3
	Summit County, OH	39153	2014	2014	105	541943	19.4
	Summit County, OH	39153	2015	2015	135	541968	24.9
	Summit County, OH	39153	2016	2016	269	540300	49.8
	Summit County, OH	39153	2017	2017	190	541228	35.1
Total	Summit County, OH	39153			755	2707263	27.9
Total					2485	8984032	27.7

Dataset: Multiple Cause of Death, 1999-2017

Query Parameters:

MCD - ICD-10 Codes: T40.0 (Opium); T40.1 (Heroin); T40.2 (Other opioids); T40.3 (Methadone); T40.4 (Other synthetic narcotics); T40.6 (Other and unspecified narcotics)

States: Cuyahoga County, OH (39035); Summit County, OH (39153)

UCD - ICD-10 Codes: X40 (Accidental poisoning by and exposure to nonopioid analgesics, antipyretics and antirheumatics); X41 (Accidental poisoning by and exposure to antiepileptic, sedative-hypnotic, antiparkinsonism and psychotropic drugs, not elsewhere classified); X42 (Accidental poisoning by and exposure to narcotics and psychodysleptics [hallucinogens], not elsewhere classified); X43 (Accidental poisoning by and exposure to other drugs acting on the autonomic nervous system); X44 (Accidental poisoning by and exposure to other and unspecified drugs, medicaments and biological substances); X60 (Intentional self-poisoning by and exposure to nonopioid analgesics, antipyretics and antirheumatics); X61 (Intentional self-poisoning by and exposure to antiepileptic, sedative-hypnotic, antiparkinsonism and psychotropic drugs, not elsewhere classified); X62 (Intentional self-poisoning by and exposure to narcotics and psychodysleptics [hallucinogens], not elsewhere classified); X63 (Intentional self-poisoning by and exposure to other drugs acting on the autonomic nervous system); X64 (Intentional self-poisoning by and exposure to other and unspecified drugs, medicaments and biological substances); X85 (Assault by drugs, medicaments and biological substances); Y10 (Poisoning by and exposure to nonopioid analgesics, antipyretics and antirheumatics, undetermined intent); Y11 (Poisoning by and exposure to antiepileptic, sedative-hypnotic, antiparkinsonism and psychotropic drugs, not elsewhere classified, undetermined intent); Y12 (Poisoning by and exposure to narcotics and psychodysleptics [hallucinogens], not elsewhere classified, undetermined intent); Y13 (Poisoning by and exposure to other drugs acting on the autonomic nervous system, undetermined intent); Y14 (Poisoning by and exposure to other and unspecified drugs, medicaments and biological substances, undetermined intent)

Year/Month: 2013; 2014; 2015; 2016; 2017

Group By: County; Year

Show Totals: True

Show Zero Values: True

Show Suppressed: True

Calculate Rates Per: 100,000

Rate Options: Default intercensal populations for years 2001-2009 (except Infant Age Groups)

Help: See <http://wonder.cdc.gov/wonder/help/mcd.html> for more information.

Query Date: Mar 13, 2019 1:19:40 PM

Suggested Citation: Centers for Disease Control and Prevention, National Center for Health Statistics. Multiple Cause of Death 1999-2017 on CDC WONDER Online Database, released December, 2018. Data are from the Multiple Cause of Death Files, 1999-2017, as compiled from data provided by the 57 vital statistics jurisdictions through the Vital Statistics Cooperative Program. Accessed at <http://wonder.cdc.gov/mcd-icd10.html> on Mar 13, 2019 1:19:40 PM

HEROIN OR FENTANYL

Notes	County	County Code	Year	Year Code	Deaths	Population	Crude Rate
	Cuyahoga County, OH	39035	2013	2013	178	1263154	14.1
	Cuyahoga County, OH	39035	2014	2014	192	1259828	15.2
	Cuyahoga County, OH	39035	2015	2015	205	1255921	16.3
	Cuyahoga County, OH	39035	2016	2016	460	1249352	36.8
	Cuyahoga County, OH	39035	2017	2017	490	1248514	39.2
Total	Cuyahoga County, OH	39035			1525	6276769	24.3
	Summit County, OH	39153	2013	2013	41	541824	7.6
	Summit County, OH	39153	2014	2014	82	541943	15.1
	Summit County, OH	39153	2015	2015	114	541968	21
	Summit County, OH	39153	2016	2016	195	540300	36.1
	Summit County, OH	39153	2017	2017	155	541228	28.6
Total	Summit County, OH	39153			587	2707263	21.7
Total					2112	8984032	23.5

Dataset: Multiple Cause of Death, 1999-2017

Query Parameters:

MCD - ICD-10 Codes: T40.1 (Heroin); T40.4 (Other synthetic narcotics)

States: Cuyahoga County, OH (39035); Summit County, OH (39153)

UCD - ICD-10 Codes: X40 (Accidental poisoning by and exposure to nonopioid analgesics, antipyretics and antirheumatics); X41 (Accidental poisoning by and exposure to antiepileptic, sedative-hypnotic, antiparkinsonism and psychotropic drugs, not elsewhere classified); X42 (Accidental poisoning by and exposure to narcotics and psychodysleptics [hallucinogens], not elsewhere classified); X43 (Accidental poisoning by and exposure to other drugs acting on the autonomic nervous system); X44 (Accidental poisoning by and exposure to other and unspecified drugs, medicaments and biological substances); X60 (Intentional self-poisoning by and exposure to nonopioid analgesics, antipyretics and antirheumatics); X61 (Intentional self-poisoning by and exposure to antiepileptic, sedative-hypnotic, antiparkinsonism and psychotropic drugs, not elsewhere classified); X62 (Intentional self-poisoning by and exposure to narcotics and psychodysleptics [hallucinogens], not elsewhere classified); X63 (Intentional self-poisoning by and exposure to other drugs acting on the autonomic nervous system); X64 (Intentional self-poisoning by and exposure to other and unspecified drugs, medicaments and biological substances); X85 (Assault by drugs, medicaments and biological substances); Y10 (Poisoning by and exposure to nonopioid analgesics, antipyretics and antirheumatics, undetermined intent); Y11 (Poisoning by and exposure to antiepileptic, sedative-hypnotic, antiparkinsonism and psychotropic drugs, not elsewhere classified, undetermined intent); Y12 (Poisoning by and exposure to narcotics and psychodysleptics [hallucinogens], not elsewhere classified, undetermined intent); Y13 (Poisoning by and exposure to other drugs acting on the autonomic nervous system, undetermined intent); Y14 (Poisoning by and exposure to other and unspecified drugs, medicaments and biological substances, undetermined intent)

Year/Month: 2013; 2014; 2015; 2016; 2017

Group By: County; Year

Show Totals: True

Show Zero Values: True

Show Suppressed: True

Calculate Rates Per: 100,000

Rate Options: Default intercensal populations for years 2001-2009 (except Infant Age Groups)

Help: See <http://wonder.cdc.gov/wonder/help/mcd.html> for more information.

Query Date: Mar 13, 2019 2:05:45 PM

Suggested Citation: Centers for Disease Control and Prevention, National Center for Health Statistics. Multiple Cause of Death 1999-2017 on CDC WONDER Online Database, released December, 2018. Data are from the Multiple Cause of Death Files, 1999-2017, as compiled from data provided by the 57 vital statistics jurisdictions through the Vital Statistics Cooperative Program. Accessed at <http://wonder.cdc.gov/mcd-icd10.html> on Mar 13, 2019 2:05:45 PM

ALL OPIOIDS

Caveats:

1. As of April 3, 2017, the underlying cause of death has been revised for 125 deaths in 2014. More information: <http://wonder.cdc.gov/wonder/help/mcd.html#2014-Revision>.
2. The population figures for year 2017 are bridged-race estimates of the July 1 resident population, from the Vintage 2017 postcensal series released by NCHS on June 27, 2018. The population figures for year 2016 are bridged-race estimates of the July 1 resident population, from the Vintage 2016 postcensal series released by NCHS on June 26, 2017. The population figures for year 2015 are bridged-race estimates of the July 1 resident population, from the Vintage 2015 postcensal series released by NCHS on June 28, 2016. The population figures for year 2014 are bridged-race estimates of the July 1 resident population, from the Vintage 2014 postcensal series released by NCHS on June 30, 2015. The population figures for year 2013 are bridged-race estimates of the July 1 resident population, from the Vintage 2013 postcensal series released by NCHS on June 26, 2014. The population figures for year 2012 are bridged-race estimates of the July 1 resident population, from the Vintage 2012 postcensal series released by NCHS on June 13, 2013. Population figures for 2011 are bridged-race estimates of the July 1 resident population, from the county-level postcensal Vintage 2011 series released by NCHS on July 18, 2012. Population figures for 2010 are April 1 Census counts. The population figures for years 2001 - 2009, are bridged-race estimates of the July 1 resident population, from the revised intercensal county-level 2000 - 2009 series released by NCHS on October 26, 2012. Population figures for 2000 are April 1 Census counts. Population figures for 1999 are from the 1990-1999 intercensal series of July 1 estimates. Population figures for Infant Age Groups are the number of live births.
Note: Rates and population figures for years 2001 - 2009 differ slightly from previously published reports, due to use of the population estimates which were available at the time of release.
3. The population figures used in the calculation of death rates for the age group 'under 1 year' are the estimates of the resident population that is under one year of age. More information: <http://wonder.cdc.gov/wonder/help/mcd.html#Age Group>.
4. Changes to cause of death classification affect reporting trends. More information: <http://wonder.cdc.gov/wonder/help/mcd.html#ICD-10 Changes>.

HEROIN OR FENTANYL

Caveats:

1. As of April 3, 2017, the underlying cause of death has been revised for 125 deaths in 2014. More information: <http://wonder.cdc.gov/wonder/help/mcd.html#2014-Revision>.
2. The population figures for year 2017 are bridged-race estimates of the July 1 resident population, from the Vintage 2017 postcensal series released by NCHS on June 27, 2018. The population figures for year 2016 are bridged-race estimates of the July 1 resident population, from the Vintage 2016 postcensal series released by NCHS on June 26, 2017. The population figures for year 2015 are bridged-race estimates of the July 1 resident population, from the Vintage 2015 postcensal series released by NCHS on June 28, 2016. The population figures for year 2014 are bridged-race estimates of the July 1 resident population, from the Vintage 2014 postcensal series released by NCHS on June 30, 2015. The population figures for year 2013 are bridged-race estimates of the July 1 resident population, from the Vintage 2013 postcensal series released by NCHS on June 26, 2014. The population figures for year 2012 are bridged-race estimates of the July 1 resident population, from the Vintage 2012 postcensal series released by NCHS on June 13, 2013. Population figures for 2011 are bridged-race estimates of the July 1 resident population, from the county-level postcensal Vintage 2011 series released by NCHS on July 18, 2012. Population figures for 2010 are April 1 Census counts. The population figures for years 2001 - 2009, are bridged-race estimates of the July 1 resident population, from the revised intercensal county-level 2000 - 2009 series released by NCHS on October 26, 2012. Population figures for 2000 are April 1 Census counts. Population figures for 1999 are from the 1990-1999 intercensal series of July 1 estimates. Population figures for Infant Age Groups are the number of live births.
Note: Rates and population figures for years 2001 - 2009 differ slightly from previously published reports, due to use of the population estimates which were available at the time of release.
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4. Changes to cause of death classification affect reporting trends. More information: <http://wonder.cdc.gov/wonder/help/mcd.html#ICD-10 Changes>.

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Year	ED Visits (Ohio)	Deaths (Ohio)	ED Visits / Death
2005	10,500	560	18.8
2006	11,200	634	17.7
2007	11,000	705	15.6
2008	13,750	814	16.9
2009	15,950	664	24.0
2010	17,900	1,124	15.9
2011	20,800	1,272	16.4
2012	25,550	1,355	18.9
2013	28,300	1,630	17.4
2014	33,250	2,106	15.8
2015	39,850	2,698	14.8
2016	55,700	3,613	15.4
2007-2016 Average			17.1
2007-2016 Average (rounded)			17.0

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APPENDIX D

Notes	Year	Year Code	Deaths	Population	Crude Rate
	1999	1999	164	11335454	1.4
	2000	2000	250	11353140	2.2
	2001	2001	336	11387404	3
	2002	2002	421	11407889	3.7
	2003	2003	365	11434788	3.2
	2004	2004	515	11452251	4.5
	2005	2005	560	11463320	4.9
	2006	2006	634	11481213	5.5
	2007	2007	705	11500468	6.1
	2008	2008	814	11515391	7.1
	2009	2009	664	11528896	5.8
	2010	2010	1124	11536504	9.7
	2011	2011	1272	11544951	11
	2012	2012	1355	11544225	11.7
	2013	2013	1630	11570808	14.1
	2014	2014	2106	11594163	18.2
	2015	2015	2698	11613423	23.2
	2016	2016	3613	11614373	31.1
	2017	2017	4293	11658609	36.8
Total			23519	2.19E+08	10.8

Dataset: Multiple Cause of Death, 1999-2017

Query Parameters:

MCD - ICD-10 Codes: T40.0 (Opium); T40.1 (Heroin); T40.2 (Other opioids); T40.3 (Methadone); T40.4 (Other synthetic narcotics); T40.6 (Other and unspecified narcotics)

States: Ohio (39)

UCD - ICD-10 Codes: X40 (Accidental poisoning by and exposure to nonopioid analgesics, antipyretics and antirheumatics); X41 (Accidental poisoning by and exposure to antiepileptic, sedative-hypnotic, antiparkinsonism and psychotropic drugs, not elsewhere classified); X42 (Accidental poisoning by and exposure to narcotics and psychodysleptics [hallucinogens], not elsewhere classified); X43 (Accidental poisoning by and exposure to other drugs acting on the autonomic nervous system); X44 (Accidental poisoning by and exposure to other and unspecified drugs, medicaments and biological substances); X60 (Intentional self-poisoning by and exposure to nonopioid analgesics, antipyretics and antirheumatics); X61 (Intentional self-poisoning by and exposure to antiepileptic, sedative-hypnotic, antiparkinsonism and psychotropic drugs, not elsewhere classified); X62 (Intentional self-poisoning by and exposure to narcotics and psychodysleptics [hallucinogens], not elsewhere classified); X63 (Intentional self-poisoning by and exposure to other drugs acting on the autonomic nervous system); X64 (Intentional self-poisoning by and exposure to other and unspecified drugs, medicaments and biological substances); X85 (Assault by drugs,

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APPENDIX D

medicaments and biological substances); Y10 (Poisoning by and exposure to nonopioid analgesics, antipyretics and antirheumatics, undetermined intent); Y11 (Poisoning by and exposure to antiepileptic, sedative-hypnotic, antiparkinsonism and psychotropic drugs, not elsewhere classified, undetermined intent); Y12 (Poisoning by and exposure to narcotics and psychodysleptics [hallucinogens], not elsewhere classified, undetermined intent); Y13 (Poisoning by and exposure to other drugs acting on the autonomic nervous system, undetermined intent); Y14 (Poisoning by and exposure to other and unspecified drugs, medicaments and biological substances, undetermined intent)

Group By: Year

Show Totals: True

Show Zero Values: False

Show Suppressed: False

Calculate Rates Per: 100,000

Rate Options: Default intercensal populations for years 2001-2009 (except Infant Age Groups)

Help: See <http://wonder.cdc.gov/wonder/help/mcd.html> for more information.

Query Date: Apr 26, 2019 2:10:45 PM

Suggested Citation: Centers for Disease Control and Prevention, National Center for Health Statistics. Multiple Cause of Death 1999-2017 on CDC WONDER Online Database, released December, 2018. Data are from the Multiple Cause of Death Files, 1999-2017, as compiled from data provided by the 57 vital statistics jurisdictions through the Vital Statistics Cooperative Program. Accessed at <http://wonder.cdc.gov/mcd-icd10.html> on Apr 26, 2019 2:10:45 PM

Caveats:

1. As of April 3, 2017, the underlying cause of death has been revised for 125 deaths in 2014. More information: <http://wonder.cdc.gov/wonder/help/mcd.html#2014-Revision>.
2. The population figures for year 2017 are bridged-race estimates of the July 1 resident population, from the Vintage 2017 postcensal series released by NCHS on June 27, 2018. The population figures for year 2016 are bridged-race estimates of the July 1 resident population, from the Vintage 2016 postcensal series released by NCHS on June 26, 2017. The population figures for year 2015 are bridged-race estimates of the July 1 resident population, from the Vintage 2015 postcensal series released by NCHS on June 28, 2016. The population figures for year 2014 are bridged-race estimates of the July 1 resident population, from the Vintage 2014 postcensal series released by NCHS on June 30, 2015. The population figures for year 2013 are bridged-race estimates of the July 1 resident population, from the Vintage 2013 postcensal series released by NCHS on June 26, 2014. The population figures for year 2012 are bridged-race estimates of the July 1 resident population, from the Vintage 2012 postcensal series released by NCHS on June 13, 2013. Population figures for 2011 are bridged-race estimates of the July 1 resident population, from the county-level postcensal Vintage 2011 series released by NCHS on July 18, 2012. Population figures for 2010 are April 1 Census counts. The population figures for years 2001 - 2009, are bridged-race estimates of the July 1 resident population, from the revised intercensal county-level 2000 - 2009 series released by NCHS on October 26, 2012. Population

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figures for 2000 are April 1 Census counts. Population figures for 1999 are from the 1990-1999 intercensal series of July 1 estimates. Population figures for Infant Age Groups are the number of live births. **Note:** Rates and population figures for years 2001 - 2009 differ slightly from previously published reports, due to use of the population estimates which were available at the time of release.

3. The population figures used in the calculation of death rates for the age group 'under 1 year' are the estimates of the resident population that is under one year of age. More information: <http://wonder.cdc.gov/wonder/help/mcd.html#Age Group>.

4. Changes to cause of death classification affect reporting trends. More information: <http://wonder.cdc.gov/wonder/help/mcd.html#ICD-10 Changes>.

MSRP Truck Sales National and State-Level Trends in Light-Duty Passenger Cars, Number of Reported Cases, and Damages by Defendant (Data by Defendant)				2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061	2062	2063	2064	2065	2066	2067	2068	2069	2070	2071	2072	2073	2074	2075	2076	2077	2078	2079	2080	2081	2082	2083	2084	2085	2086	2087	2088	2089	2090	2091	2092	2093	2094	2095	2096	2097	2098	2099	2100	2101	2102	2103	2104	2105	2106	2107	2108	2109	2110	2111	2112	2113	2114	2115	2116	2117	2118	2119	2120	2121	2122	2123	2124	2125	2126	2127	2128	2129	2130	2131	2132	2133	2134	2135	2136	2137	2138	2139	2140	2141	2142	2143	2144	2145	2146	2147	2148	2149	2150	2151	2152	2153	2154	2155	2156	2157	2158	2159	2160	2161	2162	2163	2164	2165	2166	2167	2168	2169	2170	2171	2172	2173	2174	2175	2176	2177	2178	2179	2180	2181	2182	2183	2184	2185	2186	2187	2188	2189	2190	2191	2192	2193	2194	2195	2196	2197	2198	2199	2200	2201	2202	2203	2204	2205	2206	2207	2208	2209	2210	2211	2212	2213	2214	2215	2216	2217	2218	2219	2220	2221	2222	2223	2224	2225	2226	2227	2228	2229	2230	2231	2232	2233	2234	2235	2236	2237	2238	2239	2240	2241	2242	2243	2244	2245	2246	2247	2248	2249	2250	2251	2252	2253	2254	2255	2256	2257	2258	2259	2260	2261	2262	2263	2264	2265	2266	2267	2268	2269	2270	2271	2272	2273	2274	2275	2276	2277	2278	2279	2280	2281	2282	2283	2284	2285	2286	2287	2288	2289	2290	2291	2292	2293	2294	2295	2296	2297	2298	2299	2300	2301	2302	2303	2304	2305	2306	2307	2308	2309	2310	2311	2312	2313	2314	2315	2316	2317	2318	2319	2320	2321	2322	2323	2324	2325	2326	2327	2328	2329	2330	2331	2332	2333	2334	2335	2336	2337	2338	2339	2340	2341	2342	2343	2344	2345	2346	2347	2348	2349	2350	2351	2352	2353	2354	2355	2356	2357	2358	2359	2360	2361	2362	2363	2364	2365	2366	2367	2368	2369	2370	2371	2372	2373	2374	2375	2376	2377	2378	2379	2380	2381	2382	2383	2384	2385	2386	2387	2388	2389	2390	2391	2392	2393	2394	2395	2396	2397	2398	2399	2400	2401	2402	2403	2404	2405	2406	2407	2408	2409	2410	2411	2412	2413	2414	2415	2416	2417	2418	2419	2420	2421	2422	2423	2424	2425	2426	2427	2428	2429	2430	2431	2432	2433	2434	2435	2436	2437	2438	2439	2440	2441	2442	2443	2444	2445	2446	2447	2448	2449	2450	2451	2452	2453	2454	2455	2456	2457	2458	2459	2460	2461	2462	2463	2464	2465	2466	2467	2468	2469	2470	2471	2472	2473	2474	2475	2476	2477	2478	2479	2480	2481	2482	2483	2484	2485	2486	2487	2488	2489	2490	2491	2492	2493	2494	2495	2496	2497	2498	2499	2500	2501	2502	2503	2504	2505	2506	2507	2508	2509	2510	2511	2512	2513	2514	2515	2516	2517	2518	2519	2520	2521	2522	2523	2524	2525	2526	2527	2528	2529	2530	2531	2532	2533	2534	2535	2536	2537	2538	2539	2540	2541	2542	2543	2544	2545	2546	2547	2548	2549	2550	2551	2552	2553	2554	2555	2556	2557	2558	2559	2560	2561	2562	2563	2564	2565	2566	2567	2568	2569	2570	2571	2572	2573	2574	2575	2576	2577	2578	2579	2580	2581	2582	2583	2584	2585	2586	2587	2588	2589	2590	2591	2592	2593	2594	2595	2596	2597	2598	2599	2600	2601	2602	2603	2604	2605	2606	2607	2608	2609	2610	2611	2612	2613	2614	2615	2616	2617	2618	2619	2620	2621	2622	2623	2624	2625	2626	2627	2628	2629	2630	2631	2632	2633	2634	2635	2636	2637	2638	2639	2640	2641	2642	2643	2644	2645	2646	2647	2648	2649	2650	2651	2652	2653	2654	2655	2656	2657	2658	2659	2660	2661	2662	2663	2664	2665	2666	2667	2668	2669	2670	2671	2672	2673	2674	2675	2676	2677	2678	2679	2680	2681	2682	2683	2684	2685	2686	2687	2688	2689	2690	2691	2692	2693	2694	2695	2696	2697	2698	2699	2700	2701	2702	2703	2704	2705	2706	2707	2708	2709	2710	2711	2712	2713	2714	2715	2716	2717	2718	2719	2720	2721	2722	2723	2724	2725	2726	2727	2728	2729	2730	2731	2732	2733	2734	2735	2736	2737	2738	2739	2740	2741	2742	2743	2744	2745	2746	2747	2748	2749	2750	2751	2752	2753	2754	2755	2756	2757	2758	2759	2760	2761	2762	2763	2764	2765	2766	2767	2768	2769	2770	2771	2772	2773	2774	2775	2776	2777	2778	2779	2780	2781	2782	2783	2784	2785	2786	2787	2788	2789	2790	2791	2792	2793	2794	2795	2796	2797	2798	2799	2800	2801	2802	2803	2804	2805	2806	2807	2808	2809	2810	2811	2812	2813	2814	2815	2816	2817	2818	2819	2820	2821	2822	2823	2824	2825	2826	2827	2828	2829	2830	2831	2832	2833	2834	2835	2836	2837	2838	2839	2840	2841	2842	2843	2844	2845	2846	2847	2848	2849	2850	2851	2852	2853	2854	2855	2856	2857	2858	2859	2860	2861	2862	2863	2864	2865	2866	2867	2868	2869	2870	2871	2872	2873	2874	2875	2876	2877	2878	2879	2880	2881	2882	2883	2884	2885	2886	2887	2888	2889	2890	2891	2892	2893	2894	2895	2896	2897	2898	2899	2900	2901	2902	2903	2904	2905	2906	2907	2908	2909	2910	2911	2912	2913	2914	2915	2916	2917	2918	2919	2920	2921	2922	2923	2924	2925	2926	2927	2928	2929	2930	2931	2932	2933	2934	2935	2936	2937	2938	2939	2940	2941	2942	2943	2944	2945	2946	2947	2948	2949	2950	2951	2952	2953	2954	2955	2956	2957	2958	2959	2960	2961	2962	2963	2964	2965	2966	2967	2968	2969	2970	2971	2972	2973	2974	2975	2976	2977	2978	2979	2980	2981	2982	2983	2984	2985	2986	2987	2988	2989	2990	2991	2992	2993	2994	2995	2996	2997	2998	2999	3000	3001	3002	3003	3004	3005	3006	3007	3008	3009	3010	3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Cuyahoga County Division of Children and Family Services**2017 Statistical Report (January - December 2017) and 2018 Statistical Report (January - September 2018)***Children in Out-of-Home Care Placement / Custody Types*

	Adoptive Home	Relative / Fictive Kin	DCFS Foster Care	Network Foster Care	Group Home	Residential Center	Independent Living	Other	Total Children in Placement
Q1 2017	66	499	197	851	63	143	30	18	1,867
Q2 2017	59	525	200	886	73	142	35	24	1,944
Q3 2017	56	565	197	913	66	139	37	30	2,003
Q4 2017	76	644	207	946	67	140	29	38	2,147
Q1 2018	80	740	210	982	65	147	25	39	2,288
Q2 2018	89	829	221	999	75	147	25	35	2,420
Q3 2018	75	820	242	1,052	67	156	25	43	2,480
2017 Average	64	558	200	899	67	141	33	28	1,990
2018 Average	81	796	224	1,011	69	150	25	39	2,396

2017 Annual Expense (McGuire Damages Report, Appendix IV.C-2.2, Panel 5)

Board & Care_Multiple Services	\$24,186,571
Board & Care-Foster Home	\$13,412,676
Board & Care-Institutional	\$8,559,884
Board & Care-Clothing	\$483,456
Board & Care-Incidentals	\$21,493
Foster home and institutional board and care costs	\$21,972,560

	2017\$	2019\$
Average cost per placement	\$16,805	\$17,492

Children placed in foster / instl care, avg # in 2017	1,308
Children placed in foster / instl care, avg # in 2018	1,454

Children Receiving Services On Open Cases

	9/30/2018
Children in court ordered protective supervision (COPS)	733
Children in out of home care and legal custody of DCFS	2,480
Children in open AI/AR cases	4,573
Children receiving in-home voluntary services	2,775

SUMMIT Children Services Board2017 Annual Expense (McGuire Damages Report, Appendix IV.D-2.2, Panel 5)

Other Inst-Foster Homes IV-E Inelig	\$5,575,304
Other Inst-Residential IV-E Inelig	\$4,080,262
Foster Home Expenses	\$2,476,529
Other Inst-Group IV-E Inelig	\$1,126,891
Kinship Permanency Incentive Prog	\$90,600
Kinship Care	\$284,688
Foster home and institutional costs	\$13,258,987

	2017\$	2019\$
Average cost per placement	\$20,847	\$21,699

Children placed in foster / instl care, avg #	636
Summit-Cuyahoga children services utilization ratio	48.6%
Summit-Cuyahoga minor population ratio	

CONFIDENTIAL

APPENDIX D

FTE salary estimate - family advocate

\$38,357

SOC SER WKR 1

FTE salary estimate - social worker / foster care recruiter

\$52,598

SOC SER WKR 3

FTE salary estimate - trauma counselor

\$61,736

SOCIAL SERV COUNSELOR

Cuyahoga, 2017 salaries (CUYAH_002426286)

Agency	Job Code	Hourly Rate	YTD Reg Hours	YTD Reg Earning	YTD OT Hours	YTD OT Earnings	YTD Other Earn	Term?	Title	2017\$	2019\$
HHS	724	16.88	2080	31919.2	0	0	4056.94		SOC SER WKR 1	\$35,110	\$37,258
HHS	724	17.4	2080	35539.2	12.13	208.21	688.45		SOC SER WKR 1	\$36,192	\$38,405
HHS	724	17.4	2078.56	35514.63	0	0	1134.13		SOC SER WKR 1	\$36,192	\$38,405
HHS	724	16.62	1602.42	26139.06	0	0	611.54		SOC SER WKR 1	\$34,570	\$36,684
HHS	724	18.59	1600	29225.6	49.5	1344.16	852.11		SOC SER WKR 1	\$38,667	\$41,032
HHS	722	18.59	477.5	8761.53	3.5	95.73	517.1		SOC SER WKR 3	\$38,667	\$41,032
HHS	722	26.67	2080	54475.2	1.05	27.46	1370.86		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	18.23	1160	21146.8	0.75	13.67	1153.94	T	SOC SER WKR 3	\$37,918	\$40,237
HHS	722	26.15	416	10878.4	5.83	228.71	5910.76	T	SOC SER WKR 3	\$54,392	\$57,719
HHS	722	18.23	312	5687.76	0	0	1185.13	T	SOC SER WKR 3	\$37,918	\$40,237
HHS	722	27.17	2061.95	55034.17	108.92	4237.34	2199.93		SOC SER WKR 3	\$56,514	\$59,970
HHS	722	26.67	2080	54475.2	307.99	8634.73	1397.9		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	28	2080	55002.4	5.88	153.76	1390.46		SOC SER WKR 3	\$58,240	\$61,802
HHS	722	18.59	992	18141.76	0	0	685.12		SOC SER WKR 3	\$38,667	\$41,032
HHS	722	27.46	1504	41299.84	6.26	171.9	662.61	T	SOC SER WKR 3	\$57,117	\$60,610
HHS	722	26.67	2080	54475.2	18.5	725.76	1147.17		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2080	54475.2	20.5	734.37	1117.15		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	21.64	2080	43316	156.86	3791.77	872.96		SOC SER WKR 3	\$45,011	\$47,764
HHS	722	19.62	2080	39514.4	42.67	973.12	522.46		SOC SER WKR 3	\$40,810	\$43,305
HHS	722	18.59	999.67	18278.7	5.25	143.59	693.71		SOC SER WKR 3	\$38,667	\$41,032
HHS	722	26.67	2096	54893.6	158	4858.21	855		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2080	54475.2	0	0	874.5		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2078.5	54435.98	9.5	372.69	1297.92		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2080	54475.2	65.25	2487.86	970.32		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	18.59	1600	29225.6	8.5	232.49	1405.1		SOC SER WKR 3	\$38,667	\$41,032
HHS	722	18.59	976	17827.04	0	0	702.4		SOC SER WKR 3	\$38,667	\$41,032
HHS	722	18.59	1600	29225.6	0	0	1527.99		SOC SER WKR 3	\$38,667	\$41,032
HHS	722	21.64	2080	42427.2	41.5	1131.07	757.84		SOC SER WKR 3	\$45,011	\$47,764
HHS	722	26.67	2080	54475.2	77.4	2354.31	1106.75		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.15	1952	51061.44	0	0	15610.38	T	SOC SER WKR 3	\$54,392	\$57,719
HHS	722	22.73	2080	46244.8	341	7858.43	867.09		SOC SER WKR 3	\$47,278	\$50,170
HHS	722	29.87	2080	60996.8	317.53	9374.98	1317.76		SOC SER WKR 3	\$62,130	\$65,929
HHS	722	26.67	2080	54475.2	10	392.31	837.2		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	23.87	2072	47753.6	9	303.3	795.87		SOC SER WKR 3	\$49,650	\$52,686
HHS	722	26.67	2080	54475.2	16.75	542.66	845.26		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2080	54475.2	34.54	1341.91	854.36		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2080	54475.2	203.03	6660.84	1298.57		SOC SER WKR 3	\$55,474	\$58,866

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Cuyahoga, 2017 salaries (CUYAH_002426286)

Agency	Job Code	Hourly Rate	YTD Reg Hours	YTD Reg Earning	YTD OT Hours	YTD OT Earnings	YTD Other Earn	Term?	Title	2017\$	2019\$
HHS	722	19.62	2080	38464	105.73	2561.4	1197.21		SOC SER WKR 3	\$40,810	\$43,305
HHS	722	20.61	2080	42100.8	338.87	9848.21	1090.64		SOC SER WKR 3	\$42,869	\$45,491
HHS	722	26.67	2120	55521.2	395.93	14860.68	959.39		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2080	54475.2	0	0	1290.5		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2080	54475.2	2.25	75.19	1291.02		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	21.22	408	8657.76	0	0	2694.73	T	SOC SER WKR 3	\$44,138	\$46,837
HHS	722	26.67	2080	54475.2	55	1748.08	855.27		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2080	55115.2	24	927.77	1659.29		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	25.03	1800	43370.8	262.67	9532.96	1119.01	T	SOC SER WKR 3	\$52,062	\$55,246
HHS	722	20.61	2080	40159.2	23.38	657.81	723.76		SOC SER WKR 3	\$42,869	\$45,491
HHS	722	26.67	2080	54475.2	6.5	237.34	1096.02		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	27.17	1752.65	46791.33	158.5	6217.01	997.23		SOC SER WKR 3	\$56,514	\$59,970
HHS	722	22.73	2080	44292	54.18	1292.1	842.64		SOC SER WKR 3	\$47,278	\$50,170
HHS	722	21.64	2080	43316	24.83	520.33	898.04		SOC SER WKR 3	\$45,011	\$47,764
HHS	722	19.62	2080	38544.8	0	0	702.16		SOC SER WKR 3	\$40,810	\$43,305
HHS	722	18.59	1580.5	28870.12	0	0	702.4		SOC SER WKR 3	\$38,667	\$41,032
HHS	722	26.67	2080	54475.2	0	0	836.8		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2080	54475.2	0	0	1017.5		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	28	2080	57203.2	5.75	185.36	1334.14		SOC SER WKR 3	\$58,240	\$61,802
HHS	722	26.67	2080	54475.2	38.83	1513.48	1606.65		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2080	54475.2	74.99	2895.17	875.87		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2080	54475.2	0	0	836.8		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2080	54475.2	8	315.4	841.48		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	22.73	2080	45990.4	390.96	9573.98	1082.36		SOC SER WKR 3	\$47,278	\$50,170
HHS	722	26.67	2080	54475.2	132.02	3798.97	1136.91		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	19.62	2055.67	38412.89	33.88	923.79	707.3		SOC SER WKR 3	\$40,810	\$43,305
HHS	722	19.62	1963.5	36593.1	37.98	911.31	713.54		SOC SER WKR 3	\$40,810	\$43,305
HHS	722	20.61	2080	40781.6	4.38	84.27	731.21		SOC SER WKR 3	\$42,869	\$45,491
HHS	722	19.62	2080	38544.8	1	27.35	1612.7		SOC SER WKR 3	\$40,810	\$43,305
HHS	722	26.67	2080	54475.2	535.13	14197.37	973.96		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2080	54475.2	59.52	1582.61	918.46		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2080	54475.2	151.21	5936.91	2111.35		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2094.25	55814.96	400.75	15816.54	443.16		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2080	54475.2	832.7	31642.46	1099.66		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2080	54475.2	19.88	521.04	836.8		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2080	54475.2	32.25	1208.13	842.4		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	22.73	2078	46200.24	217.89	5045.68	822.38		SOC SER WKR 3	\$47,278	\$50,170
HHS	722	26.67	2080	54475.2	60.76	1860.3	1300.65		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	19.62	2063	39180.86	46.42	1312.62	758.7		SOC SER WKR 3	\$40,810	\$43,305
HHS	722	27.17	2112	56368	271.55	9682.43	1000.62		SOC SER WKR 3	\$56,514	\$59,970
HHS	722	22.73	2080	45990.4	46.67	1550.57	1522.88		SOC SER WKR 3	\$47,278	\$50,170

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Cuyahoga, 2017 salaries (CUYAH_002426286)

Agency Job Code Hourly Rate YTD Reg Hours YTD Reg Earning YTD OT Hours YTD OT Earnings YTD Other Earn Term? Title									2017\$	2019\$
HHS	722	20.61	2080	42100.8	98.26	2871.12	781.47	SOC SER WKR 3	\$42,869	\$45,491
HHS	722	19.62	2080	39514.4	197.63	4778.56	1073.82	SOC SER WKR 3	\$40,810	\$43,305
HHS	722	19.62	2080	39514.4	67.28	1404.14	1111.15	SOC SER WKR 3	\$40,810	\$43,305
HHS	722	26.67	2080	54475.2	51.5	1896.11	1144.56	SOC SER WKR 3	\$55,474	\$58,866
HHS	722	18.59	1040	19016.8	3.5	95.73	1159.3	SOC SER WKR 3	\$38,667	\$41,032
HHS	722	19.24	903.5	17383.34	85.34	1774.99	2085.42 T	SOC SER WKR 3	\$40,019	\$42,467
HHS	722	19.62	2080	38221.6	15.26	278.19	1748.09	SOC SER WKR 3	\$40,810	\$43,305
HHS	722	26.67	2080	54475.2	354.49	13707.55	957.89	SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2080	54475.2	0	0	836.8	SOC SER WKR 3	\$55,474	\$58,866
HHS	722	22.73	1995.25	44127.61	0.03	0.68	892.29	SOC SER WKR 3	\$47,278	\$50,170
HHS	722	18.59	480	8808	0	0	509.44	SOC SER WKR 3	\$38,667	\$41,032
HHS	722	26.67	2080	54475.2	1.5	39.23	1194.05	SOC SER WKR 3	\$55,474	\$58,866
HHS	722	29.87	2080	60996.8	82.26	3061.39	1218.23	SOC SER WKR 3	\$62,130	\$65,929
HHS	722	26.67	2080	54475.2	20.35	532.69	837.78	SOC SER WKR 3	\$55,474	\$58,866
HHS	722	20.61	2080	42100.8	84.39	2210.36	756	SOC SER WKR 3	\$42,869	\$45,491
HHS	722	27.17	2080	55515.2	1514	60567.16	1340.17	SOC SER WKR 3	\$56,514	\$59,970
HHS	722	26.67	2080	54475.2	0	0	836.8	SOC SER WKR 3	\$55,474	\$58,866
HHS	722	19.62	2080	38464	0	0	1294.06	SOC SER WKR 3	\$40,810	\$43,305
HHS	722	22.73	2080	44292	157.38	4308.01	812.05	SOC SER WKR 3	\$47,278	\$50,170
HHS	722	19.24	160	2916.8	0	0	1333.33 T	SOC SER WKR 3	\$40,019	\$42,467
HHS	722	19.24	920	17054.4	6.5	166.33	2510.38 T	SOC SER WKR 3	\$40,019	\$42,467
HHS	722	26.67	2080	54475.2	18.27	629.98	844.53	SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2080	54475.2	0.25	10	836.8	SOC SER WKR 3	\$55,474	\$58,866
HHS	722	19.24	8	145.84	0	0	1149.96 T	SOC SER WKR 3	\$40,019	\$42,467
HHS	722	20.61	2080	41169.6	93.68	2524.8	1267.78	SOC SER WKR 3	\$42,869	\$45,491
HHS	722	26.67	2080	54475.2	22.37	585.88	1290.5	SOC SER WKR 3	\$55,474	\$58,866
HHS	722	21.64	2080	42427.2	96.56	2498.54	756.69	SOC SER WKR 3	\$45,011	\$47,764
HHS	722	18.23	787.25	14351.57	0.01	0.18	887.1 T	SOC SER WKR 3	\$37,918	\$40,237
HHS	722	19.62	2080	38868	17.5	474.02	711.98	SOC SER WKR 3	\$40,810	\$43,305
HHS	722	18.59	475.67	8729.06	2.5	51.13	688.65	SOC SER WKR 3	\$38,667	\$41,032
HHS	722	18.59	480	8808	0	0	517.34	SOC SER WKR 3	\$38,667	\$41,032
HHS	722	26.67	2080	54475.2	2	52.3	836.8	SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2080	54475.2	0.88	23.01	1747.19	SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2080	54475.2	0	0	836.8	SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	1568	41028.16	0	0	628.8	SOC SER WKR 3	\$55,474	\$58,866
HHS	722	19.62	2080	38544.8	36.54	732.19	709.35	SOC SER WKR 3	\$40,810	\$43,305
HHS	722	26.67	2080	54475.2	1.25	32.69	837.45	SOC SER WKR 3	\$55,474	\$58,866
HHS	722	27.17	2104	56154.8	1136.5	44665.89	1237.91	SOC SER WKR 3	\$56,514	\$59,970
HHS	722	26.15	80	2092	0	0	13971.32 T	SOC SER WKR 3	\$54,392	\$57,719
HHS	722	18.59	1520	27767.2	11	300.85	708.34	SOC SER WKR 3	\$38,667	\$41,032
HHS	722	26.67	2080	54475.2	138.5	3837.04	2177.76	SOC SER WKR 3	\$55,474	\$58,866

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Cuyahoga, 2017 salaries (CUYAH_002426286)

Agency	Job Code	Hourly Rate	YTD Reg Hours	YTD Reg Earning	YTD OT Hours	YTD OT Earnings	YTD Other Earn	Term?	Title	2017\$	2019\$
HHS	722	19.24	879.25	16916.77	19.5	548.34	3048.39	T	SOC SER WKR 3	\$40,019	\$42,467
HHS	722	20.61	2080	40781.6	0	0	925.92		SOC SER WKR 3	\$42,869	\$45,491
HHS	722	26.67	2080	54475.2	180.75	7067.98	1965.46		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2080	54475.2	96.37	2951.32	982.49		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	27.17	2111.75	56361.34	438.42	15469.22	1203.67		SOC SER WKR 3	\$56,514	\$59,970
HHS	722	23.87	2080	47134.4	0	0	787.6		SOC SER WKR 3	\$49,650	\$52,686
HHS	722	21.64	2080	43316	200.75	6337.93	1063.98		SOC SER WKR 3	\$45,011	\$47,764
HHS	722	29.87	2080	60996.8	0	0	1137.4		SOC SER WKR 3	\$62,130	\$65,929
HHS	722	22.73	2080	45990.4	0	0	944.18		SOC SER WKR 3	\$47,278	\$50,170
HHS	722	26.67	2080	54475.2	18.74	545.65	836.8		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	27.17	2080	55155.2	478.19	15183.81	2389.61		SOC SER WKR 3	\$56,514	\$59,970
HHS	722	26.67	2080	54475.2	3.5	93.35	836.8		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	23.23	2080	45934.44	787.5	25395.68	2477.34		SOC SER WKR 3	\$48,318	\$51,273
HHS	722	22.73	2080	46244.8	40.5	1368.72	1023.48		SOC SER WKR 3	\$47,278	\$50,170
HHS	722	26.15	320	8368	13.13	343.35	2863.04	T	SOC SER WKR 3	\$54,392	\$57,719
HHS	722	23.23	2112	47750.88	372.88	12054.31	1188.32		SOC SER WKR 3	\$48,318	\$51,273
HHS	722	26.67	2080	54475.2	0	0	1234.34		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2052.47	53755.3	744.75	27951.47	1371.96		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2075.78	54364.85	2.03	53.08	1291.56		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2080	54475.2	15	588.46	886.2		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2080	54475.2	0	0	1139.18		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2080	54475.2	36.92	1347.37	844.73		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	19.62	2080	38868	88.68	2504.34	866.15		SOC SER WKR 3	\$40,810	\$43,305
HHS	722	21.64	2080	42831.2	71.5	1891.35	769.94		SOC SER WKR 3	\$45,011	\$47,764
HHS	722	26.15	616	16108.4	0	0	1781.92	T	SOC SER WKR 3	\$54,392	\$57,719
HHS	722	19.62	2080	38544.8	57.75	1605.2	1045.81		SOC SER WKR 3	\$40,810	\$43,305
HHS	722	26.67	2080	54475.2	12.5	452.31	899.72		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2080	54475.2	3.25	85	1140.09		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2072	54266	26.25	1040.33	928.61		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	21.64	2080	42831.2	6	181.92	747.2		SOC SER WKR 3	\$45,011	\$47,764
HHS	722	21.64	2080	42508	49.75	1431.34	812.04		SOC SER WKR 3	\$45,011	\$47,764
HHS	722	26.67	2080	54475.2	135.77	4014.19	964.3		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	19.62	2080	38868	46.5	1083.98	876.69		SOC SER WKR 3	\$40,810	\$43,305
HHS	722	18.23	0	0	0	0	0	T	SOC SER WKR 3	\$37,918	\$40,237
HHS	722	26.67	2080	54475.2	265.66	7242.29	919.59		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	28	2080	57203.2	165.75	6751.75	2267.18		SOC SER WKR 3	\$58,240	\$61,802
HHS	722	26.67	2080	54475.2	490.25	18656.52	1123.52		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2080	54475.2	190.54	5790.05	1137.52		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	22.73	2080	44888	155	4886.37	788.96		SOC SER WKR 3	\$47,278	\$50,170
HHS	722	26.67	2080	54475.2	0	0	1009.7		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	21.64	2080	43316	145.76	3299.63	780.94		SOC SER WKR 3	\$45,011	\$47,764

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Cuyahoga, 2017 salaries (CUYAH_002426286)

Agency	Job Code	Hourly Rate	YTD Reg Hours	YTD Reg Earning	YTD OT Hours	YTD OT Earnings	YTD Other Earn	Term?	Title	2017\$	2019\$
HHS	722	26.67	2112	55312	453.67	17800.61	1057.68		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	23.87	2080	47672	212.22	7239.29	1331.54		SOC SER WKR 3	\$49,650	\$52,686
HHS	722	20.21	160	3233.6	0	0	271.78	T	SOC SER WKR 3	\$42,037	\$44,608
HHS	722	26.67	2074.75	54337.91	3.5	137.31	836.8		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2104	55102.8	106.5	4093.01	1360.18		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2080	54475.2	56.49	1867.77	1133.58		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	1967.92	51544.15	103.44	3839.77	1177.68		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2080	54475.2	25.5	869.58	850.73		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	20.61	2080	41169.6	60.92	1671.18	746.77		SOC SER WKR 3	\$42,869	\$45,491
HHS	722	20.21	1095	22129.95	0	0	611.15	T	SOC SER WKR 3	\$42,037	\$44,608
HHS	722	27.17	2080	55515.2	13.32	468.3	841.32		SOC SER WKR 3	\$56,514	\$59,970
HHS	722	20.61	1992.6	39488.02	0	0	736		SOC SER WKR 3	\$42,869	\$45,491
HHS	722	20.61	2080	42100.8	52.56	1540.54	825.6		SOC SER WKR 3	\$42,869	\$45,491
HHS	722	19.62	2080	38706.4	13.5	304.58	708.5		SOC SER WKR 3	\$40,810	\$43,305
HHS	722	26.15	1000	26150	0	0	883.61	T	SOC SER WKR 3	\$54,392	\$57,719
HHS	722	26.67	2080	54475.2	363.87	10074.05	932.91		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2072	54266	7.75	241.9	1975.34		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2080	54475.2	0.5	13.08	836.8		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2080	54475.2	3	117.69	839.14		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2080	54475.2	213.51	6261.85	1169.27		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2080	54475.2	28	1084.3	1205.37		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2080	54475.2	59	2236.1	1319.36		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2080	54475.2	61.15	2364.84	1225.91		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	18.59	472.5	8671.28	1	27.35	688.05		SOC SER WKR 3	\$38,667	\$41,032
HHS	722	26.67	2077	54396.75	414.21	16158.97	1124.02		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2080	54475.2	8.25	330.08	1139.18		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	22.73	2080	44292	2.87	60.91	957.33		SOC SER WKR 3	\$47,278	\$50,170
HHS	722	26.67	2080	54475.2	116.03	4277.6	1069.96		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	19.24	640	12313.6	1.5	28.86	709.38	T	SOC SER WKR 3	\$40,019	\$42,467
HHS	722	26.67	2080	54475.2	22.99	662.66	1015.93		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	22.73	2000	44426.4	134.76	4290.88	1258	T	SOC SER WKR 3	\$47,278	\$50,170
HHS	722	18.59	1526.45	27884.78	17	473.33	688.27		SOC SER WKR 3	\$38,667	\$41,032
HHS	722	18.59	1480	27038	4.5	108.6	703.03		SOC SER WKR 3	\$38,667	\$41,032
HHS	722	26.67	2080	54475.2	440.17	16970.3	980.46		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2080	54475.2	4.5	176.54	2833.34		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2080	54475.2	2.25	90.02	2137.06		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2080	54475.2	0	0	1532.3		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2080	54475.2	0	0	996.96		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	22.73	2080	44292	88.63	2160.78	807.56		SOC SER WKR 3	\$47,278	\$50,170
HHS	722	18.59	1600	29225.6	46.73	1206.5	804.76		SOC SER WKR 3	\$38,667	\$41,032
HHS	722	19.62	1916.86	34758.74	25.75	628.57	737.34		SOC SER WKR 3	\$40,810	\$43,305

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Cuyahoga, 2017 salaries (CUYAH_002426286)

Agency	Job Code	Hourly Rate	YTD Reg Hours	YTD Reg Earning	YTD OT Hours	YTD OT Earnings	YTD Other Earn	Term?	Title	2017\$	2019\$
HHS	722	26.67	2079.35	54458.2	6.66	174.15	1096.02		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2080	54475.2	50.49	1860	863.05		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	22.73	2080	45651.2	59.54	1697.35	785.25		SOC SER WKR 3	\$47,278	\$50,170
HHS	722	26.67	2080	54475.2	0	0	836.8		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	19.62	2080	38544.8	28.37	732.21	705.3		SOC SER WKR 3	\$40,810	\$43,305
HHS	722	22.73	1424	31629.12	0.62	13.81	612.68		SOC SER WKR 3	\$47,278	\$50,170
HHS	722	19.62	2080	38544.8	299.04	6400.21	810.22		SOC SER WKR 3	\$40,810	\$43,305
HHS	722	18.59	480	8808	0	0	515.2		SOC SER WKR 3	\$38,667	\$41,032
HHS	722	26.67	1789.78	46885.95	0.41	10.72	782.71		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2080	54475.2	27.38	1068.08	849.67		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	18.59	992	18141.76	3.75	104.59	685.12		SOC SER WKR 3	\$38,667	\$41,032
HHS	722	26.67	2080	54475.2	33.26	956.92	1124.7		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2080	54475.2	4.5	117.68	838.36		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2080	54475.2	318.63	11723.9	1172.66		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	22.73	2077	46347.56	0.38	8.47	776.65		SOC SER WKR 3	\$47,278	\$50,170
HHS	722	26.67	2080	54475.2	57.5	2010.5	1116.69		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	18.23	0	0	0	0	528.67	T	SOC SER WKR 3	\$37,918	\$40,237
HHS	722	26.67	2080	54475.2	52.25	1417.72	1118.52		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	27.17	2128	56794.4	781.84	30829.22	1568.16		SOC SER WKR 3	\$56,514	\$59,970
HHS	722	19.62	2080	38868	22.58	623.62	894.4		SOC SER WKR 3	\$40,810	\$43,305
HHS	722	23.87	2080	47672	10.5	288.55	1000.26		SOC SER WKR 3	\$49,650	\$52,686
HHS	722	26.67	2077.92	54420.81	24.17	938.38	1145.29		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.15	880	23012	4.5	176.54	1163.47	T	SOC SER WKR 3	\$54,392	\$57,719
HHS	722	21.64	2080	42831.2	207	4473.67	786.26		SOC SER WKR 3	\$45,011	\$47,764
HHS	722	20.61	2080	41092	0	0	736		SOC SER WKR 3	\$42,869	\$45,491
HHS	722	18.59	992	18141.76	0	0	551.2		SOC SER WKR 3	\$38,667	\$41,032
HHS	722	20.61	1840	36287.2	84.9	1746.1	2468.98	T	SOC SER WKR 3	\$42,869	\$45,491
HHS	722	18.59	1016	18579.28	0	0	693.76		SOC SER WKR 3	\$38,667	\$41,032
HHS	722	26.67	2080	54475.2	37	1418.83	951.28		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2080	54475.2	73.15	2817.25	865.6		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	20.61	2080	42100.8	0	0	942.18		SOC SER WKR 3	\$42,869	\$45,491
HHS	722	22.73	2079.05	45630.03	65.94	2061.84	999.57		SOC SER WKR 3	\$47,278	\$50,170
HHS	722	26.67	2080	54475.2	75.39	2027.54	858.33		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	22.73	2080	46244.8	318.1	7391.41	869.7		SOC SER WKR 3	\$47,278	\$50,170
HHS	722	26.67	2080	54475.2	165.71	6197.49	1335.22		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	23.23	2080	45332	589	19228.29	986.68		SOC SER WKR 3	\$48,318	\$51,273
HHS	722	19.24	1112	21314.08	89.07	2320.58	916.18	T	SOC SER WKR 3	\$40,019	\$42,467
HHS	722	19.62	2080	38058.4	13.38	359.61	1617.75		SOC SER WKR 3	\$40,810	\$43,305
HHS	722	26.67	2080	54475.2	249.03	7752.39	1907.3		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2080	54475.2	73.75	2116.53	861.04		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2080	54475.2	152.52	3991.23	873.53		SOC SER WKR 3	\$55,474	\$58,866

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Cuyahoga, 2017 salaries (CUYAH_002426286)

Agency	Job Code	Hourly Rate	YTD Reg Hours	YTD Reg Earning	YTD OT Hours	YTD OT Earnings	YTD Other Earn	Term?	Title	2017\$	2019\$
HHS	722	26.67	2080	54475.2	0	0	874.5		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2080	54475.2	0	0	836.8		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	20.61	2078	41053.52	217.52	6394.08	1199		SOC SER WKR 3	\$42,869	\$45,491
HHS	722	26.67	2080	54475.2	8	264.38	996.96		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	18.59	1423	25998.89	0	0	696.28		SOC SER WKR 3	\$38,667	\$41,032
HHS	722	23.4	704	16473.6	1	35.1	1976.76	T	SOC SER WKR 3	\$48,672	\$51,649
HHS	722	18.59	1024	18725.12	1.33	36.83	696.92		SOC SER WKR 3	\$38,667	\$41,032
HHS	722	18.23	750.1	13674.32	0	0	100.81	T	SOC SER WKR 3	\$37,918	\$40,237
HHS	722	26.67	2069.08	54189.65	0	0	836.02		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	27.47	2080	56100.8	8	277.68	855.49		SOC SER WKR 3	\$57,138	\$60,632
HHS	722	26.15	2080	54392	0	0	1541.66		SOC SER WKR 3	\$54,392	\$57,719
HHS	722	26.67	2000	52383.2	0	0	1514.55		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2080	54475.2	40	1170.54	852.29		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	27.17	2104	56154.8	1350.25	54040.65	3538.98		SOC SER WKR 3	\$56,514	\$59,970
HHS	722	20.21	1840	35867.2	16.8	323.23	400	T	SOC SER WKR 3	\$42,037	\$44,608
HHS	722	26.67	2080	54475.2	62.5	2347.24	1112.54		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2079.03	54449.83	28.8	1027.86	839.92		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	21.64	2080	42427.2	190.05	4080.03	776.97		SOC SER WKR 3	\$45,011	\$47,764
HHS	722	21.22	1616	34291.52	0	0	383.87	T	SOC SER WKR 3	\$44,138	\$46,837
HHS	722	20.21	1480	29910.8	44.13	1144.64	366.27	T	SOC SER WKR 3	\$42,037	\$44,608
HHS	722	20.61	2080	41169.6	8.41	242.71	736		SOC SER WKR 3	\$42,869	\$45,491
HHS	722	27.47	2080	56100.8	28	1131.2	955.78		SOC SER WKR 3	\$57,138	\$60,632
HHS	722	26.67	2078.5	54435.98	7.88	206.07	881.46		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2080	54475.2	0	0	836.8		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.41	2080	54849.6	24.47	757.35	213.46		SOC SER WKR 3	\$54,933	\$58,292
HHS	722	26.67	2080	54475.2	1.5	58.85	836.8		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	20.61	1789	35210.9	49.42	1455.79	663.92		SOC SER WKR 3	\$42,869	\$45,491
HHS	722	26.67	2080	54475.2	72.75	2551.57	868.34		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2080	54475.2	0.01	0.26	1009.71		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2080	54475.2	0.5	13.08	879.19		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2080	54475.2	3	117.69	836.8		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	19.62	2074	37949.02	15.77	440.77	930.82		SOC SER WKR 3	\$40,810	\$43,305
HHS	722	26.67	1992	52174	88.75	3486.56	1140.22		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	19.62	2080	38544.8	17.5	493.73	1740.32		SOC SER WKR 3	\$40,810	\$43,305
HHS	722	19.62	2080	38868	5.25	95.71	708.56		SOC SER WKR 3	\$40,810	\$43,305
HHS	722	18.59	1520	27767.2	80.5	2187.64	1366.7		SOC SER WKR 3	\$38,667	\$41,032
HHS	722	22.73	2079.5	44537.66	0	0	902.2		SOC SER WKR 3	\$47,278	\$50,170
HHS	722	19.62	2078.25	38026.51	0.75	13.67	824.86		SOC SER WKR 3	\$40,810	\$43,305
HHS	722	26.67	2080	54475.2	104.51	3026.59	871.98		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2080	54475.2	8.5	340.09	836.8		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	25.03	2080	49480	1.5	35.1	944.8		SOC SER WKR 3	\$52,062	\$55,246

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APPENDIX D

Cuyahoga, 2017 salaries (CUYAH_002426286)

										FTE salary (2080 hrs/year)	
										2017\$	2019\$
Agency	Job Code	Hourly Rate	YTD Reg Hours	YTD Reg Earning	YTD OT Hours	YTD OT Earnings	YTD Other Earn	Term?	Title		
HHS	722	26.15	1304	34099.6	0	0	700.05	T	SOC SER WKR 3	\$54,392	\$57,719
HHS	722	22.73	2077.92	45604.86	15.5	512.33	2057.06		SOC SER WKR 3	\$47,278	\$50,170
HHS	722	26.67	2080	54475.2	0	0	836.8		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	1736.25	45486.14	1.5	39.23	1223.96		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	21.64	2080	42831.2	205.54	4778.01	999.31		SOC SER WKR 3	\$45,011	\$47,764
HHS	722	26.67	2080	54475.2	29.25	879.6	844.34		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	22.28	712	15863.36	48.75	1581.89	664.84	T	SOC SER WKR 3	\$46,342	\$49,177
HHS	722	19.24	818.5	15747.94	0	0	255.87	T	SOC SER WKR 3	\$40,019	\$42,467
HHS	722	18.59	1040	19016.8	17.07	472.94	705.54		SOC SER WKR 3	\$38,667	\$41,032
HHS	722	18.59	480	8808	9	251.01	515.2		SOC SER WKR 3	\$38,667	\$41,032
HHS	722	26.67	2080	54475.2	0	0	836.8		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	27.17	2104	56154.8	533.2	16157.05	1162.75		SOC SER WKR 3	\$56,514	\$59,970
HHS	722	26.67	2080	54475.2	0	0	836.8		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.15	1200	31380	18.12	473.84	8688.6	T	SOC SER WKR 3	\$54,392	\$57,719
HHS	722	26.67	2080	54475.2	407.68	15999.93	1527.75		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2080	54475.2	143.5	5641.33	1146.49		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2080	54475.2	15.75	617.88	978.43		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	18.59	1494	27293.22	4.5	123.08	702.4		SOC SER WKR 3	\$38,667	\$41,032
HHS	722	22.73	2080	44292	0.29	6.15	897.75		SOC SER WKR 3	\$47,278	\$50,170
HHS	722	19.62	2080	38221.6	23.7	561.56	697.2		SOC SER WKR 3	\$40,810	\$43,305
HHS	722	21.64	2080	43316	152.23	3547.46	865.15		SOC SER WKR 3	\$45,011	\$47,764
HHS	722	20.61	2079.67	40774.93	112.23	2209.87	757.86		SOC SER WKR 3	\$42,869	\$45,491
HHS	722	26.67	2080	54475.2	16	536.22	840.71		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	23.23	2112	48005.28	654	21545.12	1090.71		SOC SER WKR 3	\$48,318	\$51,273
HHS	722	26.67	2064	54056.8	0.5	13.34	1318.12		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2080	54475.2	182.64	6450.66	1826.37		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	27.17	2080	55515.2	87.54	3319.36	879.46		SOC SER WKR 3	\$56,514	\$59,970
HHS	722	18.59	480	8808	0.58	15.86	731.08		SOC SER WKR 3	\$38,667	\$41,032
HHS	722	26.67	2080	54475.2	0	0	836.8		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	20.61	2080	41092	289.87	7780.79	2217.75		SOC SER WKR 3	\$42,869	\$45,491
HHS	722	26.67	2080	54475.2	0	0	836.8		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2080	54475.2	16	627.68	1121.5		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	27.17	2120	56581.2	185.5	7090.85	899.07		SOC SER WKR 3	\$56,514	\$59,970
HHS	722	28.5	2120	59400.8	1071.07	43382.1	1457.17		SOC SER WKR 3	\$59,280	\$62,905
HHS	722	20.61	2080	41169.6	136.14	3229.4	939.72		SOC SER WKR 3	\$42,869	\$45,491
HHS	722	21.64	2080	42669.6	509.12	15531.49	1367.01		SOC SER WKR 3	\$45,011	\$47,764
HHS	722	18.59	1600	29225.6	27.16	722.94	709.05		SOC SER WKR 3	\$38,667	\$41,032
HHS	722	21.64	2080	43316	127.32	3548.26	977.9		SOC SER WKR 3	\$45,011	\$47,764
HHS	722	20.21	320	6467.2	14.25	336.02	1094.17	T	SOC SER WKR 3	\$42,037	\$44,608
HHS	722	19.62	1720	31588	0	0	667.4	N	SOC SER WKR 3	\$40,810	\$43,305
HHS	722	26.67	2080	54475.2	2.5	98.08	836.8		SOC SER WKR 3	\$55,474	\$58,866

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Cuyahoga, 2017 salaries (CUYAH_002426286)

										FTE salary (2080 hrs/year)	
Agency	Job Code	Hourly Rate	YTD Reg Hours	YTD Reg Earning	YTD OT Hours	YTD OT Earnings	YTD Other Earn	Term?	Title	2017\$	2019\$
HHS	722	26.67	2080	54475.2	323.05	8466.88	1192.66		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	27.17	2128	56794.4	641.77	25177.19	1066.6		SOC SER WKR 3	\$56,514	\$59,970
HHS	722	26.15	1520	39748	221	7178.76	3582.52	T	SOC SER WKR 3	\$54,392	\$57,719
HHS	722	29.08	2080	56027.2	0	0	0		SOC SER WKR 3	\$60,486	\$64,186
HHS	722	20.61	2080	42100.8	61.13	1458.9	1766.16		SOC SER WKR 3	\$42,869	\$45,491
HHS	722	26.67	2080	54475.2	2.25	88.27	1009.7		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2080	54475.2	15.5	553.51	840.32		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2080	54475.2	11	398.53	1050.52		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2080	54475.2	40.75	1123.94	956.41		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	20.61	2069	41878.49	57.89	1571.83	925.9		SOC SER WKR 3	\$42,869	\$45,491
HHS	722	26.67	2080	54475.2	43.75	1263.75	852.01		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	18.59	1600	29225.6	26	688.46	713.52		SOC SER WKR 3	\$38,667	\$41,032
HHS	722	20.61	2056	39697.44	153	3810.74	990.09		SOC SER WKR 3	\$42,869	\$45,491
HHS	722	22.73	2080	45651.2	57.09	1748.81	795.27		SOC SER WKR 3	\$47,278	\$50,170
HHS	722	20.61	2080	41169.6	13.56	260.89	736		SOC SER WKR 3	\$42,869	\$45,491
HHS	722	18.59	1040	19016.8	4.25	116.24	704.69		SOC SER WKR 3	\$38,667	\$41,032
HHS	722	18.59	1592	29079.76	23	589.64	1412.4		SOC SER WKR 3	\$38,667	\$41,032
HHS	722	26.67	2074.4	54325.85	6.75	176.9	839.53		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2080	54475.2	11.02	288.18	2137.06		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.15	40	1046	0	0	533.17	T	SOC SER WKR 3	\$54,392	\$57,719
HHS	722	26.67	2080	54475.2	0.5	19.62	836.8		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	19.62	2072	39360.48	73.49	1451.38	718.35		SOC SER WKR 3	\$40,810	\$43,305
HHS	722	27.17	2088	55728.4	323.33	12101.76	940.41		SOC SER WKR 3	\$56,514	\$59,970
HHS	722	26.67	2080	54475.21	92.5	3628.81	886.72		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2076.25	54377.14	35	1333.82	1754.6		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2055.5	53834.53	3	120.03	996.96		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	20.61	2080	42100.8	47.5	1440.2	764.5		SOC SER WKR 3	\$42,869	\$45,491
HHS	722	19.62	2075.5	38785.97	71.84	1871.23	756.7		SOC SER WKR 3	\$40,810	\$43,305
HHS	722	18.59	1596	29152.68	0	0	756.96		SOC SER WKR 3	\$38,667	\$41,032
HHS	722	19.62	2080	39514.4	82	2322.94	741.72		SOC SER WKR 3	\$40,810	\$43,305
HHS	722	26.67	2080	54475.2	39	1545.58	1534.67		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2080	54475.2	13.75	541.76	952.05		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2080	54475.2	0	0	836.8		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2080	54475.2	0	0	836.8		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2080	54475.2	58.2	1559.51	855.44		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2080	54475.2	81	2902.55	919.61		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	22.73	2072	45812.16	48.53	1614.47	1109.71		SOC SER WKR 3	\$47,278	\$50,170
HHS	722	23.87	2080	46960.8	289.42	7537.93	9103.35		SOC SER WKR 3	\$49,650	\$52,686
HHS	722	26.67	2080	54475.2	0	0	836.8		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	19.62	2048	37638.24	20.25	499.12	702.37		SOC SER WKR 3	\$40,810	\$43,305
HHS	722	18.59	1040	19016.8	3.5	95.73	704.3		SOC SER WKR 3	\$38,667	\$41,032

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Cuyahoga, 2017 salaries (CUYAH_002426286)

Agency Job Code Hourly Rate YTD Reg Hours YTD Reg Earning YTD OT Hours YTD OT Earnings YTD Other Earn Term? Title									2017\$	2019\$
HHS	722	18.59	1013.6	18535.53	5.83	157.93	694.49	SOC SER WKR 3	\$38,667	\$41,032
HHS	722	23.87	2080	46686.4	115.13	2671.46	792.16	SOC SER WKR 3	\$49,650	\$52,686
HHS	722	23.87	2080	47672	62.68	2032.99	989.48	SOC SER WKR 3	\$49,650	\$52,686
HHS	722	26.67	2080	54475.2	105.06	2747.3	1061.01	SOC SER WKR 3	\$55,474	\$58,866
HHS	722	22.73	2080	46160	205.12	6756.78	1320.93	SOC SER WKR 3	\$47,278	\$50,170
HHS	722	21.64	2070.6	43116.54	2.88	90.42	753.5	SOC SER WKR 3	\$45,011	\$47,764
HHS	722	21.64	2080	43316	234.37	5496.16	806.59	SOC SER WKR 3	\$45,011	\$47,764
HHS	722	18.59	480	8808	0	0	515.2	SOC SER WKR 3	\$38,667	\$41,032
HHS	722	19.24	832	16007.68	0	0	2218.75 T	SOC SER WKR 3	\$40,019	\$42,467
HHS	722	20.61	2078.5	40130.34	123.51	2999.13	1349.69	SOC SER WKR 3	\$42,869	\$45,491
HHS	722	20.61	2080	40159.2	30.41	853.22	905.07	SOC SER WKR 3	\$42,869	\$45,491
HHS	722	21.64	2080	43316	247.17	5341.14	808.46	SOC SER WKR 3	\$45,011	\$47,764
HHS	722	23.87	2080	47940.8	0	0	998.38	SOC SER WKR 3	\$49,650	\$52,686
HHS	722	22.73	1022.25	22660.13	5.17	172.78	603.1	SOC SER WKR 3	\$47,278	\$50,170
HHS	722	19.62	1881	35039.24	10.42	268.27	633.51	SOC SER WKR 3	\$40,810	\$43,305
HHS	722	26.67	2080	54475.2	0	0	992.28	SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	1207.07	31628.03	0	0	811.9	SOC SER WKR 3	\$55,474	\$58,866
HHS	722	18.59	1600	29225.6	16.13	421.74	705.07	SOC SER WKR 3	\$38,667	\$41,032
HHS	722	19.62	2048	38252.32	17	437.71	745.35	SOC SER WKR 3	\$40,810	\$43,305
HHS	722	16.62	2080	51418.64	24.5	882.66	759.32	SOC SER WKR 3	\$34,570	\$36,684
HHS	722	26.67	2128	55730.4	245.66	9538.51	1400.29	SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2080	54475.2	15.51	462.55	2144.86	SOC SER WKR 3	\$55,474	\$58,866
HHS	722	27.47	2080	56100.8	0	0	853.6	SOC SER WKR 3	\$57,138	\$60,632
HHS	722	20.21	1581.8	31036.98	29.92	810.93	146.18 T	SOC SER WKR 3	\$42,037	\$44,608
HHS	722	26.67	2080	54475.2	112.88	3047.87	886.8	SOC SER WKR 3	\$55,474	\$58,866
HHS	722	19.62	2080	38868	0	0	809.96	SOC SER WKR 3	\$40,810	\$43,305
HHS	722	26.67	2080	54475.2	117	3625.92	848.39	SOC SER WKR 3	\$55,474	\$58,866
HHS	722	19.62	2080	38221.6	69.75	1920.32	1628.86	SOC SER WKR 3	\$40,810	\$43,305
HHS	722	19.62	2080	38221.6	12	353.16	695.76	SOC SER WKR 3	\$40,810	\$43,305
HHS	722	18.59	480	8808	0	0	515.2	SOC SER WKR 3	\$38,667	\$41,032
HHS	722	19.62	2080	39514.4	31.13	598.94	821.41	SOC SER WKR 3	\$40,810	\$43,305
HHS	722	18.59	479.25	8794.06	0	0	515.2	SOC SER WKR 3	\$38,667	\$41,032
HHS	722	19.62	2080	39514.4	23.88	488.06	822.83	SOC SER WKR 3	\$40,810	\$43,305
HHS	722	19.62	2080	38706.4	68.8	1285.79	720.85	SOC SER WKR 3	\$40,810	\$43,305
HHS	722	20.61	2079.85	41942.57	14.67	438.71	1055.48	SOC SER WKR 3	\$42,869	\$45,491
HHS	722	26.67	2080	54475.2	175.89	4884.51	911.96	SOC SER WKR 3	\$55,474	\$58,866
HHS	722	22.21	2080	45352	181	5437.59	947.76	SOC SER WKR 3	\$46,197	\$49,022
HHS	722	29.87	2080	60996.8	89.38	3349.05	1761.27	SOC SER WKR 3	\$62,130	\$65,929
HHS	722	26.67	2080	54475.2	6	235.39	1141.92	SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2080	54475.2	4.25	166.73	837.58	SOC SER WKR 3	\$55,474	\$58,866
HHS	722	20.21	960	19401.6	15.07	420.82	2811.01 T	SOC SER WKR 3	\$42,037	\$44,608

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Cuyahoga, 2017 salaries (CUYAH_002426286)

Agency	Job Code	Hourly Rate	YTD Reg Hours	YTD Reg Earning	YTD OT Hours	YTD OT Earnings	YTD Other Earn	Term?	Title	2017\$	2019\$
HHS	722	19.62	2080	38544.8	25.42	683.62	715.39		SOC SER WKR 3	\$40,810	\$43,305
HHS	722	19.62	2032	37183.36	0	0	702.4		SOC SER WKR 3	\$40,810	\$43,305
HHS	722	26.67	2136	56927.6	639	25548.68	678.72		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	23.87	2080	48568	2	70.2	794.8		SOC SER WKR 3	\$49,650	\$52,686
HHS	722	21.64	2071.75	42260.47	20.33	596.19	746.89		SOC SER WKR 3	\$45,011	\$47,764
HHS	722	26.67	2080	54475.2	21	780.49	943.59		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	19.62	1768	33608.48	99.22	2570.56	746.78		SOC SER WKR 3	\$40,810	\$43,305
HHS	722	19.62	2080	38868	0.62	11.93	708.79		SOC SER WKR 3	\$40,810	\$43,305
HHS	722	23.87	2071.67	47477.45	184.91	6403.62	892.86		SOC SER WKR 3	\$49,650	\$52,686
HHS	722	19.62	2024	37847.12	14.5	396.58	809.96		SOC SER WKR 3	\$40,810	\$43,305
HHS	722	18.59	920	16829.2	0	0	673.6		SOC SER WKR 3	\$38,667	\$41,032
HHS	722	26.67	2080	54475.2	1.88	49.16	3036.92		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	20.61	2080	40159.2	217.22	4822.66	776.68		SOC SER WKR 3	\$42,869	\$45,491
HHS	722	20.61	2080	40159.2	37.38	1017.42	942.87		SOC SER WKR 3	\$42,869	\$45,491
HHS	722	18.23	312	5687.76	0	0	524.29 T		SOC SER WKR 3	\$37,918	\$40,237
HHS	722	18.23	1192.68	21742.56	0	0	561.69 T		SOC SER WKR 3	\$37,918	\$40,237
HHS	722	19.62	2080	39514.4	101.54	2827.46	857.03		SOC SER WKR 3	\$40,810	\$43,305
HHS	722	26.67	2080	54475.2	115.77	3524.97	912.8		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2078	54422.9	27.5	1015	993.63		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	25.03	2080	49753.6	11.28	408.76	957.84		SOC SER WKR 3	\$52,062	\$55,246
HHS	722	26.15	181.5	4746.23	0	0	1205.78 T		SOC SER WKR 3	\$54,392	\$57,719
HHS	722	22.73	1934.25	41199.19	0.68	14.43	691.58		SOC SER WKR 3	\$47,278	\$50,170
HHS	722	19.62	2080	38221.6	26.58	702.98	757.1		SOC SER WKR 3	\$40,810	\$43,305
HHS	722	19.62	2080	38544.8	131.75	3523.85	850.85		SOC SER WKR 3	\$40,810	\$43,305
HHS	722	19.62	2080	38221.6	0	0	1605.76		SOC SER WKR 3	\$40,810	\$43,305
HHS	722	26.15	1665	43539.76	48.65	1344.13	3195.15 T		SOC SER WKR 3	\$54,392	\$57,719
HHS	722	23.23	2081.29	45360.02	609.75	19498.98	1433.22		SOC SER WKR 3	\$48,318	\$51,273
HHS	722	26.67	2080	54475.2	0	0	878.92		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2080	54475.2	2.5	98.08	836.8		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	23.87	2080	48747.2	40.63	1170.03	1073.94		SOC SER WKR 3	\$49,650	\$52,686
HHS	722	19.62	2080	38221.6	17.67	435.41	701.11		SOC SER WKR 3	\$40,810	\$43,305
HHS	722	26.67	2080	54475.2	190.01	6643.53	1004.3		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.15	1360	35564	0	0	1887.06 T		SOC SER WKR 3	\$54,392	\$57,719
HHS	722	26.67	2080	54475.2	4.5	117.68	879.71		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2080	54475.21	70.22	1843.68	848.03		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	29.87	2080	60996.8	110.71	3856.27	921.04		SOC SER WKR 3	\$62,130	\$65,929
HHS	722	26.67	2078.02	54423.42	8.48	316.58	1077.57		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	19.62	2080	39514.4	0	0	719.2		SOC SER WKR 3	\$40,810	\$43,305
HHS	722	26.67	2080	54475.2	7.5	297.35	928.38		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	25.03	2080	50300.8	0	0	886.48		SOC SER WKR 3	\$52,062	\$55,246
HHS	722	19.24	1240	22645.6	10	273.51	2116.4 T		SOC SER WKR 3	\$40,019	\$42,467

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Cuyahoga, 2017 salaries (CUYAH_002426286)

Agency	Job Code	Hourly Rate	YTD Reg Hours	YTD Reg Earning	YTD OT Hours	YTD OT Earnings	YTD Other Earn	Term?	Title	2017\$	2019\$
HHS	722	20.61	2080	41092	75	2056.61	762.73		SOC SER WKR 3	\$42,869	\$45,491
HHS	722	19.62	2080	38544.8	183.02	4622.08	767.22		SOC SER WKR 3	\$40,810	\$43,305
HHS	722	18.59	1600	29225.6	24	661.75	1405.38		SOC SER WKR 3	\$38,667	\$41,032
HHS	722	26.67	2080	54475.2	49.5	1806.13	853.07		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	27.17	2080	55515.2	240.26	9449.55	922.34		SOC SER WKR 3	\$56,514	\$59,970
HHS	722	22.73	2080	45990.4	295.65	6540.88	952.38		SOC SER WKR 3	\$47,278	\$50,170
HHS	722	26.67	2080	54475.2	107.49	2969	1760.33		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2080	54475.2	40.16	1570.26	1217.04		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2080	54475.2	0	0	836.8		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	29.08	2079.75	56020.56	0	0	0		SOC SER WKR 3	\$60,486	\$64,186
HHS	722	26.67	2080	54475.2	196.76	6784.98	956.01		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	22.73	2072	45812.16	85.66	2141.54	493.28		SOC SER WKR 3	\$47,278	\$50,170
HHS	722	26.67	2080	54475.2	3	104.61	881		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	20.61	2080	40781.6	21	612.63	885.46		SOC SER WKR 3	\$42,869	\$45,491
HHS	722	20.61	2080	42100.8	217.08	6063.38	1013.63		SOC SER WKR 3	\$42,869	\$45,491
HHS	722	26.67	2120	55521.2	714.84	27836.27	1251.06		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2080	54475.2	162.99	5879.57	1895.02		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	1913.75	50090.35	0.05	1.31	1266.97		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	19.62	2080	38868	35.97	957.53	772.21		SOC SER WKR 3	\$40,810	\$43,305
HHS	722	26.67	2080	54475.2	15.5	575.38	944.45		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	19.24	1760	33296.8	62.62	1763.74	1885.52 T		SOC SER WKR 3	\$40,019	\$42,467
HHS	722	19.62	2080	38706.4	38.74	875.23	790.25		SOC SER WKR 3	\$40,810	\$43,305
HHS	722	18.59	476.5	8744.2	0	0	688.94		SOC SER WKR 3	\$38,667	\$41,032
HHS	722	18.59	1500	27402.6	0	0	1328.08		SOC SER WKR 3	\$38,667	\$41,032
HHS	722	26.67	2080	54475.2	0	0	836.8		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2080	54475.2	47.66	1248.28	850.27		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2080	54475.2	71.85	2097.32	961.65		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2080	54475.2	18.5	562.26	1584.56		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2104	55102.8	774.55	29934.53	1427.39		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	19.24	0	0	0	0	839.05 T		SOC SER WKR 3	\$40,019	\$42,467
HHS	722	26.67	2080	54475.2	45.24	1740.72	864.35		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2080	54475.2	746.53	22996.07	1336.73		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2080	54475.2	6.01	158.14	994.23		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2080	54475.2	0	0	836.8		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2080	54475.2	0	0	1096.02		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	20.21	1280	24937.6	106.31	2265.6	1572.74 T		SOC SER WKR 3	\$42,037	\$44,608
HHS	722	26.67	2080	54475.2	65.59	1852.64	1199.38		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	22.73	2079.16	46226.08	30.76	1036.11	840.47		SOC SER WKR 3	\$47,278	\$50,170
HHS	722	18.59	1600	29225.6	30.48	802.72	711.37		SOC SER WKR 3	\$38,667	\$41,032
HHS	722	19.62	2080	38544.8	7.64	139.29	1614.46		SOC SER WKR 3	\$40,810	\$43,305
HHS	722	18.59	1600	29225.6	20.96	562.96	1410.54		SOC SER WKR 3	\$38,667	\$41,032

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Cuyahoga, 2017 salaries (CUYAH_002426286)

Agency	Job Code	Hourly Rate	YTD Reg Hours	YTD Reg Earning	YTD OT Hours	YTD OT Earnings	YTD Other Earn	Term?	Title	2017\$	2019\$
HHS	722	26.67	2080	54475.2	22.5	809.66	1124.5		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2080	54475.2	24.75	810.72	846.56		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	29.08	2080	57398.4	0	0	74.36		SOC SER WKR 3	\$60,486	\$64,186
HHS	722	26.67	2093.61	55797.92	748.75	29058.94	400		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2080	54475.2	10.5	401.7	1537.38		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2080	54475.2	1011.25	36131.59	1588.72		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2080	54475.2	87.53	2322.39	854.94		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2080	54475.2	0	0	1290.5		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2080	54475.2	0	0	1290.5		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2080	54475.2	0	0	933.52		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	18.23	152	2770.96	0	0	32.08	T	SOC SER WKR 3	\$37,918	\$40,237
HHS	722	26.67	2080	54475.2	0	0	996.96		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	27.17	2080	55515.2	549.93	21992.83	1271.13		SOC SER WKR 3	\$56,514	\$59,970
HHS	722	26.67	2077.13	54400.15	13.5	529.61	835.31		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2060.6	53967.89	20.5	804.22	836.8		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2080	54475.2	13.75	500.18	953.61		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2080	54475.2	0	0	1139.18		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	20.61	2028.33	40122.15	39.3	776.75	891.91		SOC SER WKR 3	\$42,869	\$45,491
HHS	722	19.62	2080	38124.8	0	0	808.24		SOC SER WKR 3	\$40,810	\$43,305
HHS	722	19.24	932.74	17945.92	0.01	0.19	153.92	T	SOC SER WKR 3	\$40,019	\$42,467
HHS	722	19.62	2079.67	38538.78	0	0	715.16		SOC SER WKR 3	\$40,810	\$43,305
HHS	722	26.67	2072	54266	3	101.35	1370.32		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2128	55730.4	76.15	2655.26	888.74		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2080	54475.2	24.02	758.93	1208.77		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2080	54475.2	49	1423.15	954.19		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	27.17	560	14924	94.5	3778.12	125.02		SOC SER WKR 3	\$56,514	\$59,970
HHS	722	26.67	2080	54475.2	44	1627.97	1299.86		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2010.54	52638.02	15.75	617.88	836.25		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2080	54475.2	48.09	1483.15	1102.08		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	21.64	2080	42427.2	0	0	739.2		SOC SER WKR 3	\$45,011	\$47,764
HHS	722	18.23	664	12104.72	0	0	835.75	T	SOC SER WKR 3	\$37,918	\$40,237
HHS	722	19.62	2080	39352.8	99.4	2772.79	768.95		SOC SER WKR 3	\$40,810	\$43,305
HHS	722	20.61	2080	40781.6	105.97	2974.9	838.88		SOC SER WKR 3	\$42,869	\$45,491
HHS	722	26.67	2080	54475.2	236.64	6374.41	2238.22		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2080	54475.2	118.47	3620.57	1310		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2077.74	54416.1	26.75	1021.01	1580.27		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2080	54475.2	12	470.76	1100.7		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2079.94	54473.63	17.5	691.61	1104.6		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	24.17	0	0	0	0	0	N	SOC SER WKR 3	\$50,274	\$53,348
HHS	722	20.61	2077.23	40727.07	136.88	3752.65	966.98		SOC SER WKR 3	\$42,869	\$45,491
HHS	722	19.62	2080	38221.6	110.25	3026.36	716.01		SOC SER WKR 3	\$40,810	\$43,305

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APPENDIX D

Cuyahoga, 2017 salaries (CUYAH_002426286)

										FTE salary (2080 hrs/year)	
Agency	Job Code	Hourly Rate	YTD Reg Hours	YTD Reg Earning	YTD OT Hours	YTD OT Earnings	YTD Other Earn	Term?	Title	2017\$	2019\$
HHS	722	22.73	2080	46244.8	258.28	6087.72	1256.44		SOC SER WKR 3	\$47,278	\$50,170
HHS	722	20.21	380	7679.8	36.12	1013.07	2336.88	T	SOC SER WKR 3	\$42,037	\$44,608
HHS	722	19.62	2080	38221.6	10.25	280.34	700.49		SOC SER WKR 3	\$40,810	\$43,305
HHS	722	26.67	2080	54475.2	121.63	3180.64	933		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	19.62	2080	38706.4	25.01	579.06	861.83		SOC SER WKR 3	\$40,810	\$43,305
HHS	722	26.67	2080	54475.2	0	0	836.8		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2080	54475.2	2.5	100.03	836.8		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	19.62	2080	38221.6	56.38	1283.17	721.09		SOC SER WKR 3	\$40,810	\$43,305
HHS	722	18.59	1040	19016.8	39.52	1084.07	711.24		SOC SER WKR 3	\$38,667	\$41,032
HHS	722	26.67	2080	54475.2	204.45	5592.05	894.69		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2080	54475.2	219.43	5745.58	884.33		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2080	54475.2	0	0	836.8		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2080	54475.2	29.13	761.77	912.39		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2080	54475.2	4.55	118.99	838.52		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	19.62	2080	38544.8	181.39	4237.65	908.91		SOC SER WKR 3	\$40,810	\$43,305
HHS	722	21.64	2080	42427.2	63	1910.16	977.82		SOC SER WKR 3	\$45,011	\$47,764
HHS	722	27.17	2080	55515.2	518.91	20167.76	1058.53		SOC SER WKR 3	\$56,514	\$59,970
HHS	722	27.17	2080	54875.2	97.25	3687.58	986.38		SOC SER WKR 3	\$56,514	\$59,970
HHS	722	19.24	160	3078.4	11.75	339.11	1824.46	T	SOC SER WKR 3	\$40,019	\$42,467
HHS	722	29.87	2080	60996.8	12.18	356.64	1412.6		SOC SER WKR 3	\$62,130	\$65,929
HHS	722	23.87	2080	47672	123.5	3063.93	830.04		SOC SER WKR 3	\$49,650	\$52,686
HHS	722	20.61	1968	38004.32	3.07	94.11	775.47		SOC SER WKR 3	\$42,869	\$45,491
HHS	722	18.23	1136	20709.28	0	0	538.17	T	SOC SER WKR 3	\$37,918	\$40,237
HHS	722	21.64	2040	41561.6	303.71	9213.12	2838.63	T	SOC SER WKR 3	\$45,011	\$47,764
HHS	722	26.67	2080	54475.2	48.25	1587.03	861.51		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2076	54370.6	0	0	878.92		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	29.08	2080	56027.2	0	0	0		SOC SER WKR 3	\$60,486	\$64,186
HHS	722	19.62	2080	38221.6	12.92	235.53	700.41		SOC SER WKR 3	\$40,810	\$43,305
HHS	722	20.61	2080	40159.2	33.38	827.61	723.66		SOC SER WKR 3	\$42,869	\$45,491
HHS	722	26.67	2080	54475.2	0.39	10.2	1290.5		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	26.67	2080	54475.2	0.01	0.26	836.8		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	18.59	1560	28496.4	20.66	428.15	1408.4		SOC SER WKR 3	\$38,667	\$41,032
HHS	722	28	2072	56983.52	466.15	13404.61	961.9		SOC SER WKR 3	\$58,240	\$61,802
HHS	722	28	2080	57203.2	1	27.46	2057.94		SOC SER WKR 3	\$58,240	\$61,802
HHS	722	19.62	2080	38464	233.83	5760.03	853.83		SOC SER WKR 3	\$40,810	\$43,305
HHS	722	19.62	2080	38544.8	68.26	1441.27	720.26		SOC SER WKR 3	\$40,810	\$43,305
HHS	722	28	2080	57203.2	61.64	1915.76	1054.48		SOC SER WKR 3	\$58,240	\$61,802
HHS	722	26.67	2080	54475.2	367.5	14022.95	1244.49		SOC SER WKR 3	\$55,474	\$58,866
HHS	722	20.61	2075.3	42005.81	381.43	8040.5	557.47		SOC SER WKR 3	\$42,869	\$45,491
HHS	722	19.62	2080	39352.8	111.5	2651.24	747.13		SOC SER WKR 3	\$40,810	\$43,305
HHS	722	26.67	2080	54475.2	214.32	6686.66	924.68		SOC SER WKR 3	\$55,474	\$58,866

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Cuyahoga, 2017 salaries (CUYAH_002426286)

Agency	Job Code	Hourly Rate	YTD Reg Hours	YTD Reg Earning	YTD OT Hours	YTD OT Earnings	YTD Other Earn	Term?	Title
HHS	722	26.67	2080	54475.2	0	0	836.8		SOC SER WKR 3
HHS	711	27.97	2080	58133.6	0	0	14.3		SOCIAL SERV COUNSELOR

FTE salary (2080 hrs/year)	
2017\$	2019\$
\$55,474	\$58,866
\$58,178	\$61,736

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Notes	County	County Code	Yearly July 1st Estimates	Yearly July 1st Estimates Code	Age	Age Code	Population
	Cuyahoga County, OH	39035	2017	2017	< 1 year	0	14488
	Cuyahoga County, OH	39035	2017	2017	1 year	1	14368
	Cuyahoga County, OH	39035	2017	2017	2 years	2	14434
	Cuyahoga County, OH	39035	2017	2017	3 years	3	14512
	Cuyahoga County, OH	39035	2017	2017	4 years	4	14212
	Cuyahoga County, OH	39035	2017	2017	5 years	5	14057
	Cuyahoga County, OH	39035	2017	2017	6 years	6	14171
	Cuyahoga County, OH	39035	2017	2017	7 years	7	13758
	Cuyahoga County, OH	39035	2017	2017	8 years	8	13834
	Cuyahoga County, OH	39035	2017	2017	9 years	9	14318
	Cuyahoga County, OH	39035	2017	2017	10 years	10	14407
	Cuyahoga County, OH	39035	2017	2017	11 years	11	14367
	Cuyahoga County, OH	39035	2017	2017	12 years	12	14527
	Cuyahoga County, OH	39035	2017	2017	13 years	13	14623
	Cuyahoga County, OH	39035	2017	2017	14 years	14	14563
	Cuyahoga County, OH	39035	2017	2017	15 years	15	14858
	Cuyahoga County, OH	39035	2017	2017	16 years	16	15453
	Cuyahoga County, OH	39035	2017	2017	17 years	17	16036
	Cuyahoga County, OH	39035	2017	2017	18 years	18	15018
Total	Cuyahoga County, OH	39035	2017	2017			276004
Total	Cuyahoga County, OH	39035					276004
	Summit County, OH	39153	2017	2017	< 1 year	0	5925
	Summit County, OH	39153	2017	2017	1 year	1	6117
	Summit County, OH	39153	2017	2017	2 years	2	6023
	Summit County, OH	39153	2017	2017	3 years	3	6250
	Summit County, OH	39153	2017	2017	4 years	4	6179
	Summit County, OH	39153	2017	2017	5 years	5	6135
	Summit County, OH	39153	2017	2017	6 years	6	6043
	Summit County, OH	39153	2017	2017	7 years	7	6201
	Summit County, OH	39153	2017	2017	8 years	8	6115
	Summit County, OH	39153	2017	2017	9 years	9	6346
	Summit County, OH	39153	2017	2017	10 years	10	6435
	Summit County, OH	39153	2017	2017	11 years	11	6273
	Summit County, OH	39153	2017	2017	12 years	12	6390
	Summit County, OH	39153	2017	2017	13 years	13	6464
	Summit County, OH	39153	2017	2017	14 years	14	6465

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	Summit County, OH	39153	2017	2017 15 years	15	6704
	Summit County, OH	39153	2017	2017 16 years	16	6956
	Summit County, OH	39153	2017	2017 17 years	17	7103
	Summit County, OH	39153	2017	2017 18 years	18	6737
Total	Summit County, OH	39153	2017	2017		120861
Total	Summit County, OH	39153				120861
Total						396865

Dataset: Bridged-Race Population Estimates 1990-2017

Query Parameters:

Age: < 1 year; 1 year; 2 years; 3 years; 4 years; 5 years; 6 years; 7 years; 8 years; 9 years; 10 years; 11 years; 12 years; 13 years; 14 years; 15 years; 16 years; 17 years; 18 years

States: Cuyahoga County, OH (39035); Summit County, OH (39153)

Yearly July 1st Estimates: 2017

Group By: County; Yearly July 1st Estimates; Age

Show Totals: True

Show Zero Values: False

Data Table: Default

Help: See <http://wonder.cdc.gov/wonder/help/bridged-race.html> for more information.

Query Date: Mar 17, 2019 4:30:20 PM

Suggested Citation: United States Department of Health and Human Services (US DHHS), Centers for Disease Control and Prevention (CDC), National Center for Health Statistics (NCHS), Bridged-Race Population Estimates, United States July 1st resident population by state, county, age, sex, bridged-race, and Hispanic origin. Compiled from 1990-1999 bridged-race intercensal population estimates (released by NCHS on 7/26/2004); revised bridged-race 2000-2009 intercensal population estimates (released by NCHS on 10/26/2012); and bridged-race Vintage 2017 (2010-2017) postcensal population estimates (released by NCHS on 6/27/2018). Available on CDC WONDER Online Database. Accessed at <http://wonder.cdc.gov/bridged-race-v2017.html> on Mar 17, 2019 4:30:20 PM

Footnotes:

1. Estimates for 1990-1999 are bridged-race intercensal population estimates of the July 1 resident population. Estimates for 2000-2009 are revised bridged-race intercensal estimates of the July 1 resident population. Estimates for 2010-2017 are bridged-race Vintage 2017 postcensal estimates of the July 1 resident population. These estimates were prepared by the Census Bureau in collaboration with NCHS.

Caveats:

1. County geography changes over time. New counties are created and old counties are deleted or their boundaries are modified. The county codes and names for years 1990-1999 are based on Census 2000 geography; those for year 2000 and later are based on Census 2010 geography.

2. The U.S. Census Bureau annually releases unbridged population estimates for five-year age groups and race at the county level (<http://www.census.gov/popest/research/eval-estimates/eval-est2010.html>). The Census Bureau does not release bridged-race or unbridged estimates by single year of age at the county level due to concerns about the reliability of these estimates. However, these estimates are provided to the National Center for Health Statistics to meet programmatic needs such as the creation of age groupings that differ from the standard groupings used by the Census Bureau. Users of the single-year-of-age county-level bridged race population estimates should carefully consider the limited reliability of these estimates.

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					2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
SH01	Sheriff	01A001	General Fund Operating	Total Expenditures	\$ 70,582,372	\$ 71,417,031	\$ 74,025,972	\$ 69,435,306	\$ 58,520,027	\$ -	\$ -	\$ -	\$ (1)	\$ -	\$ -	\$ -
SH01	Sheriff	20A630	Home Detention Fees	Total Expenditures	\$ 13,063	\$ 14,855	\$ 58,373	\$ 371,465	\$ 46,447	\$ 139,813	\$ 72,817	\$ 74,462	\$ 58,342	\$ 107,769	\$ 439,752	\$ 13,264
SH01	Sheriff	20A806	Carrying Concealed Weapons Application Fees	Total Expenditures	\$ 40,574	\$ 51,957	\$ 78,822	\$ 91,482	\$ 53,425	\$ 154,249	\$ 227,471	\$ 202,560	\$ 175,971	\$ 175,174	\$ 183,047	\$ 150,017
SH01	Sheriff	20A812	Common Pleas Special Project 1	Total Expenditures	\$ 258,012	\$ 333,854	\$ 336,477	\$ 254,864	\$ 186,189	\$ 158,735	\$ 171,374	\$ 175,573	\$ 94,281	\$ 183,197	\$ -	\$ -
SH01	Sheriff	20A821	State Criminal Alien Asst. Program (SCAAP)	Total Expenditures	\$ -	\$ -	\$ 64,863	\$ 78,971	\$ -	\$ 46,948	\$ 50,471	\$ 84,368	\$ 48,470	\$ 54,519	\$ 51,766	\$ 17,764
SH01	Sheriff	20AA05	Law Enforcement Continuing Profesional Training	Total Expenditures	\$ -	\$ -	\$ -	\$ 2,977	\$ 16,942	\$ 600	\$ -	\$ -	\$ 280	\$ 15,621	\$ -	\$ 4,727
SH02	Inmate Services	01A001	General Fund Operating	Total Expenditures	\$ 7,257,984	\$ 7,495,546	\$ 8,006,671	\$ 7,505,022	\$ 7,394,453	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
SH03	Sheriff Law Enforcement	01A001	General Fund Operating	Total Expenditures	\$ -	\$ -	\$ -	\$ -	\$ 3,198,037	\$ 13,825,619	\$ 14,664,922	\$ 15,595,378	\$ 16,057,631	\$ 17,984,750	\$ 18,335,990	\$ 19,509,105
SH04	Sheriff Jail Operations	01A001	General Fund Operating	Total Expenditures	\$ -	\$ -	\$ -	\$ -	\$ 9,730,245	\$ 57,575,582	\$ 58,683,056	\$ 63,832,343	\$ 63,719,239	\$ 69,364,686	\$ 65,225,792	\$ 66,905,074
SH04	Sheriff Jail Operations	20A830	Mental Health Services HHS	Total Expenditures	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,173,747	\$ 1,975,172
SH05	Sheriff Operations	01A001	General Fund Operating	Total Expenditures	\$ -	\$ -	\$ -	\$ -	\$ 275,660	\$ 7,197,903	\$ 7,409,463	\$ 5,431,090	\$ 5,647,715	\$ 5,370,450	\$ 5,579,145	\$ 5,402,043
SH07	Impact Unit	01A001	General Fund Operating	Total Expenditures	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 6,135	\$ 1,615,835	\$ 919,350	\$ 924,036	\$ 1,059,535	\$ -	\$ -
SH06	Building Security Services	61A608	Sheriff Building Security Services	Total Expenditures	\$ -	\$ -	\$ -	\$ -	\$ 5,714,678	\$ 9,965,054	\$ 10,109,315	\$ 10,102,153	\$ 9,972,284	\$ 11,297,914	\$ 10,519,026	\$ 10,869,957
SH0801	Euclid Jail	20A900	Euclid Jail	Total Expenditures	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 526,814	\$ 1,741,420	\$ 2,098,063	\$ -
SH0802	Euclid Jail - G.F.	01A001	General Fund Operating	Total Expenditures	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 2,054,291

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APPENDIX D

FTE salary estimate

\$60,496

Cuyahoga, 2017 salaries (CUYAH_002426286)

Agency	Job Code	Hourly Rate	YTD Reg Hours	YTD Reg Earning	YTD OT Hours	YTD OT Earnings	YTD Other Earn	Term?	Title	FTE salary (2080 hrs/year)	
										2017\$	2019\$
Common Pleas Court	299	34.3991	2080	71064.54	0	0	1772.16		CHIEF SOCIAL WORKER	\$71,550	\$75,926
Common Pleas Court	218	25.6336	2080	52956.05	0	0	942.17		SOCIAL WORKER	\$53,318	\$56,579
Common Pleas Court	218	29.1834	2080	60289.4	0	0	996.12		SOCIAL WORKER	\$60,701	\$64,414

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APPENDIX D

Year	Date	Type	Dose per UoM	Unit of Measure	Unit Price	Unit Qty	Dose Price	Dose Qty	Price
2014	03/06/14	Naloxone 2mg (2ml) Luer Jet	1	Single	\$14.50	150	\$14.50	150	\$2,175
2014	05/26/14	Naloxone 2mg (2ml) Luer Jet	1	Single	\$14.50	300	\$14.50	300	\$4,350
2014	06/18/14	Naloxone 2mg (2ml) Luer Jet	1	Single	\$14.50	300	\$14.50	300	\$4,350
2014	09/12/14	Naloxone 2mg (2ml) Luer Jet	1	Single	\$14.50	700	\$14.50	700	\$10,150
2015	04/21/15	Naloxone 2mg (2ml) Luer Jet	1	Single	\$36.71	400	\$36.71	400	\$14,684
2015	07/31/15	Naloxone 2mg (2ml) Luer Jet	1	Single	\$36.71	260	\$36.71	260	\$9,545
2015	09/23/15	Naloxone 2mg (2ml) Luer Jet	1	Single	\$36.71	620	\$36.71	620	\$22,760
2016	03/16/16	Naloxone 2mg (2ml) Luer Jet	1	Single	\$39.60	500	\$39.60	500	\$19,800
2016	05/18/16	Naloxone 2mg (2ml) Luer Jet	10	Case	\$396.00	91	\$39.60	910	\$36,036
2016	08/24/16	Naloxone 2mg (2ml) Luer Jet	1	Single	\$39.60	310	\$39.60	310	\$12,276
2016	09/28/16	Naloxone 2mg (2ml) Luer Jet	1	Single	\$36.19	1,230	\$36.19	1,230	\$44,514
2016	09/30/16	Naloxone 2mg (2ml) Luer Jet	1	Single	\$39.60	270	\$39.60	270	\$10,692
2016	12/16/16	Naloxone 2mg (2ml) Luer Jet	1	Single	\$36.19	1,000	\$36.19	1,000	\$36,190
2016	12/16/16	Naloxone 2mg (2ml) Luer Jet	1	Single	\$36.19	1,000	\$36.19	1,000	\$36,190
2016	12/20/16	Naloxone 2mg (2ml) Luer Jet	1	Single	\$36.19	1,000	\$36.19	1,000	\$36,190
2017	05/31/17	Naloxone 2mg (2ml) Luer Jet	1	Single	\$36.19	500	\$36.19	500	\$18,095
2017	06/07/17	Naloxone 2mg (2ml) Luer Jet	1	Single	\$36.19	881	\$36.19	881	\$31,883
2017	07/14/17	Naloxone 2mg (2ml) Luer Jet	1	Single	\$36.19	1,381	\$36.19	1,381	\$49,978
2017	09/20/17	Naloxone 2mg (2ml) Luer Jet	1	Single	\$36.19	5,000	\$36.19	5,000	\$180,950
2017	03/21/17	Nasal Narcan Spray 4mg (0.1ml)	2	Box	\$94.94	300	\$47.47	600	\$28,482
2017	10/31/17	Nasal Narcan Spray 4mg (0.1ml)	2	Box	\$106.24	59	\$53.12	118	\$6,268
2017	11/07/17	Nasal Narcan Spray 4mg (0.1ml)	2	Box	\$106.24	301	\$53.12	602	\$31,978
2017	11/07/17	Nasal Narcan Spray 4mg (0.1ml)	2	Box	\$106.24	1,500	\$53.12	3,000	\$159,360
2014						1,450	\$14.50	1,450	\$21,025
2015						1,280	\$36.71	1,280	\$46,989
2016						5,401	\$37.28	6,220	\$231,888
2017						9,922	\$41.96	12,082	\$506,995

SOURCE: doc14251020180718124639.pdf (CLEVE_001627553)

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APPENDIX D

FTE salary estimate \$55,525

Cuyahoga, 2017 salaries (CUYAH_002426286)

Agency	Job Code	Hourly Rate	YTD Reg Hours	YTD Reg Earning	YTD OT Hours	YTD OT Earnings	YTD Other Earn	Term?	Title	FTE salary (2080 hrs/year)	
										2017\$	2019\$
HHS	873	18.21	2080	37848	254.17	6943.92	276.2		PROGRAM OFFICER 1	\$37,877	\$40,193
HHS	873	19.25	2080	40009.6	8.63	166.12	0		PROGRAM OFFICER 1	\$40,040	\$42,489
HHS	873	18.21	2080	37848	191.79	5239.34	44.98		PROGRAM OFFICER 1	\$37,877	\$40,193
HHS	873	19.76	896	17673.76	15.5	459.42	2985.14	T	PROGRAM OFFICER 1	\$41,101	\$43,614
HHS	873	19.76	1429.67	28250.28	0	0	0		PROGRAM OFFICER 1	\$41,101	\$43,614
HHS	873	18.21	2080	37848	0	0	2393.6		PROGRAM OFFICER 1	\$37,877	\$40,193
HHS	873	26.62	2080	55328	0	0	0		PROGRAM OFFICER 1	\$55,370	\$58,756
HHS	873	18.21	1152	20977.92	97.5	2638.66	0		PROGRAM OFFICER 1	\$37,877	\$40,193
HHS	873	18.72	1360	25459.2	0	0	0		PROGRAM OFFICER 1	\$38,938	\$41,319
HHS	873	18.21	240	4370.4	3.95	107.91	0		PROGRAM OFFICER 1	\$37,877	\$40,193
HHS	872	21.21	1160	24570	0	0	824.22	T	PROGRAM OFFICER 2	\$44,117	\$46,815
HHS	872	22.79	2080	47367.2	0	0	464.36		PROGRAM OFFICER 2	\$47,403	\$50,302
HHS	872	25.61	2080	53228.8	0	0	0		PROGRAM OFFICER 2	\$53,269	\$56,527
HHS	872	23.63	2080	48378.4	2.75	84.05	54.08		PROGRAM OFFICER 2	\$49,150	\$52,156
HHS	872	22.72	2072	46340.16	77	2569.38	131.04		PROGRAM OFFICER 2	\$47,258	\$50,148
HHS	872	21.63	2080	44251.2	0	0	286.81		PROGRAM OFFICER 2	\$44,990	\$47,742
HHS	872	23.17	1987.5	45322.05	0	0	0		PROGRAM OFFICER 2	\$48,194	\$51,141
HHS	872	23.99	1887.25	45237.53	0	0	1006.2		PROGRAM OFFICER 2	\$49,899	\$52,951
HHS	872	21.21	320	6787.2	0	0	95.23		PROGRAM OFFICER 2	\$44,117	\$46,815
HHS	872	22.72	2080	46518.4	70	1854.11	0		PROGRAM OFFICER 2	\$47,258	\$50,148
HHS	872	24.6	2023.25	48930.85	92	3318.8	683.16		PROGRAM OFFICER 2	\$51,168	\$54,297
HHS	872	23.17	2080	47437.6	0	0	939.12		PROGRAM OFFICER 2	\$48,194	\$51,141
HHS	872	23.63	2076.25	48217.91	83	2603.2	233.79		PROGRAM OFFICER 2	\$49,150	\$52,156
HHS	872	22.72	2080	46518.4	0	0	240.24		PROGRAM OFFICER 2	\$47,258	\$50,148
HHS	872	21.62	2080	44280	6.75	154.58	332.64		PROGRAM OFFICER 2	\$44,970	\$47,720
HHS	872	20.99	2080	43626.4	0	0	185.64		PROGRAM OFFICER 2	\$43,659	\$46,329
HHS	872	25.61	2062.9	52790.87	0	0	0		PROGRAM OFFICER 2	\$53,269	\$56,527
HHS	872	22.72	2080	46518.4	5.85	194.01	0		PROGRAM OFFICER 2	\$47,258	\$50,148
HHS	872	24.6	2080	50330.4	8	295.2	380.8		PROGRAM OFFICER 2	\$51,168	\$54,297
HHS	872	31.96	2080	66426.4	0	0	253.24		PROGRAM OFFICER 2	\$66,477	\$70,542
HHS	872	22.28	986.12	21935.55	61.6	2058.68	590.86	T	PROGRAM OFFICER 2	\$46,342	\$49,177
HHS	872	25.9	2080	53831.2	0	0	443.56		PROGRAM OFFICER 2	\$53,872	\$57,167
HHS	872	22.72	1440	32203.76	0	0	270.53	T	PROGRAM OFFICER 2	\$47,258	\$50,148
HHS	872	21.63	2080	44175.6	8	259.6	153.16		PROGRAM OFFICER 2	\$44,990	\$47,742
HHS	872	20.99	1912.65	40113.72	0	0	407.68		PROGRAM OFFICER 2	\$43,659	\$46,329
HHS	872	23.17	1946.25	44409.6	0	0	257.42		PROGRAM OFFICER 2	\$48,194	\$51,141
HHS	872	23.17	2080	47437.6	8	224.52	311.81		PROGRAM OFFICER 2	\$48,194	\$51,141
HHS	872	21.62	2080	44214.4	0	0	975.6		PROGRAM OFFICER 2	\$44,970	\$47,720
HHS	872	25.61	2080	52396	99.5	3748.11	124.8		PROGRAM OFFICER 2	\$53,269	\$56,527
HHS	872	21.6	337.91	7265.26	0	0	0		PROGRAM OFFICER 2	\$44,928	\$47,676
HHS	872	22.28	2080	45252.8	0	0	46.8		PROGRAM OFFICER 2	\$46,342	\$49,177

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Cuyahoga, 2017 salaries (CUYAH_002426286)

Agency	Job Code	Hourly Rate	YTD Reg Hours	YTD Reg Earning	YTD OT Hours	YTD OT Earnings	YTD Other Earn	Term?	Title	FTE salary (2080 hrs/year)	
										2017\$	2019\$
HHS	872	20.99	888	18606.32	0	0	0	T	PROGRAM OFFICER 2	\$43,659	\$46,329
HHS	871	28.76	2080	59776	0	0	0		PROGRAM OFFICER 3	\$59,821	\$63,479
HHS	871	26.62	2080	55328	0	0	239.72		PROGRAM OFFICER 3	\$55,370	\$58,756
HHS	871	32.34	2080	66209.6	0	0	0		PROGRAM OFFICER 3	\$67,267	\$71,381
HHS	871	30.2	2080	62768.8	0	0	0		PROGRAM OFFICER 3	\$62,816	\$66,658
HHS	871	42.67	2072	84027.92	0	0	123.24		PROGRAM OFFICER 3	\$88,754	\$94,182
HHS	871	25.16	2080	39931.2	0.01	0.2	0		PROGRAM OFFICER 3	\$52,333	\$55,533
HHS	871	28.05	1280	35904	0	0	0		PROGRAM OFFICER 3	\$58,344	\$61,912
HHS	871	26.62	2080	55328	0	0	266.5		PROGRAM OFFICER 3	\$55,370	\$58,756
HHS	871	27.97	2080	54541.6	0	0	2248		PROGRAM OFFICER 3	\$58,178	\$61,736
HHS	871	26.62	2080	55328	0	0	0		PROGRAM OFFICER 3	\$55,370	\$58,756
HHS	871	25.16	2080	46458.56	16	493.83	311.79		PROGRAM OFFICER 3	\$52,333	\$55,533
HHS	871	26.62	1200	31902.4	0	0	2058.79	T	PROGRAM OFFICER 3	\$55,370	\$58,756
HHS	871	25.16	2080	44939.2	0	0	183.56		PROGRAM OFFICER 3	\$52,333	\$55,533
HHS	871	25.16	2080	52293.6	0	0	536.64		PROGRAM OFFICER 3	\$52,333	\$55,533
HHS	871	26.62	888	23592.16	0	0	4	T	PROGRAM OFFICER 3	\$55,370	\$58,756
HHS	871	25.16	2080	52293.6	0	0	0		PROGRAM OFFICER 3	\$52,333	\$55,533
HHS	871	27.97	2080	58133.6	0	0	336.7		PROGRAM OFFICER 3	\$58,178	\$61,736
HHS	871	33.24	2080	69087.2	0	0	520.26		PROGRAM OFFICER 3	\$69,139	\$73,368
HHS	871	26.1	80	2088	0	0	6810.8	T	PROGRAM OFFICER 3	\$54,288	\$57,608
HHS	871	26.62	2080	54138.4	23.5	591.34	49.28		PROGRAM OFFICER 3	\$55,370	\$58,756
HHS	871	28.05	1432	40123.6	0	0	6343.22	T	PROGRAM OFFICER 3	\$58,344	\$61,912
HHS	871	28.05	1280	35860	0	0	6753.58	T	PROGRAM OFFICER 3	\$58,344	\$61,912
HHS	871	34.24	2080	59168.8	94	2432.31	232.18		PROGRAM OFFICER 3	\$71,219	\$75,575
HHS	871	29.57	2080	58609.6	0	0	417.58		PROGRAM OFFICER 3	\$61,506	\$65,267
HHS	871	25.16	2080	52293.6	0	0	0		PROGRAM OFFICER 3	\$52,333	\$55,533
HHS	871	26.62	2080	55328	0	0	399.62		PROGRAM OFFICER 3	\$55,370	\$58,756
HHS	747	31.16	1320	41082.4	0	0	132.48	T	PROGRAM OFFICER 4	\$64,813	\$68,777
HHS	874	28.75	2080	51141.6	89.37	2870.23	610.86		PROGRAM OFFICER 4	\$59,800	\$63,457
HHS	747	30.29	2080	58876	0	0	0		PROGRAM OFFICER 4	\$63,003	\$66,856
HHS	874	32.72	2080	63215.6	0	0	470.76		PROGRAM OFFICER 4	\$68,058	\$72,220
HHS	874	27.97	2080	58133.6	0	0	41.34		PROGRAM OFFICER 4	\$58,178	\$61,736
HHS	874	28.26	2080	58226.4	6	167.55	214.76		PROGRAM OFFICER 4	\$58,781	\$62,376
HHS	874	27.97	2080	58133.6	0	0	0		PROGRAM OFFICER 4	\$58,178	\$61,736
HHS	747	37.5	2080	71472	0	0	479.08		PROGRAM OFFICER 4	\$78,000	\$82,770
HHS	874	27.97	2080	58133.6	0	0	146.38		PROGRAM OFFICER 4	\$58,178	\$61,736
HHS	874	27.97	2080	55216	0	0	168.48		PROGRAM OFFICER 4	\$58,178	\$61,736
HHS	747	20.01	2078.08	39679.13	153	3967.49	810.76		PROGRAM OFFICER 4	\$41,621	\$44,166
HHS	747	20.01	2080	39716.8	67.75	1903.01	833.3		PROGRAM OFFICER 4	\$41,621	\$44,166

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"The cost per syringe distributed in U.S. dollars was \$0.97 for the NEP, \$0.37 for the pharmacy-based NEP, \$0.64 for pharmacy kit distribution, \$0.43 for pharmacy kit sale. The total annual cost in U.S. dollars of providing 50% of the syringes needed for a single syringe for every injection ranged from \$6 to \$40 million for New York City, from \$30,000 to \$200,000 for Dayton, Ohio."

Source: Lurie et al. (1998), "An economic analysis of needle exchange and pharmacy-based programs to increase sterile syringe availability for injection drug users."

needle exchange program (NEP) \$0.97 \$1.52 << 2019\$ (<https://data.bls.gov/cgi-bin/cpicalc.pl>)

Circle Health, Form 990 Schedule O, Year Ended June 30, 2016 (p. 44)

HIV/AIDS SERVICES CONSISTS OF THREE DISTINCT SERVICE AREAS: HIV TESTING, SYRINGE EXCHANGE PROGRAM AND HIV TREATMENT.

Number of Syringes Exchanged 495,000
 Cost of HIV/AIDS Services \$440,557
 Cost per Syringe Exchanged \$0.89 \$0.94 << 2019\$ (<https://data.bls.gov/cgi-bin/cpicalc.pl>)

<https://www.scph.org/dashboards>

	Jan 2019	Feb 2019	Avg		# of users	67.4%	<< OUD %
Summit NEP Needles Provided	23,945	24,505	24,225	Heroin	407	60.7%	
Estimated OUD %			16,318	Fentanyl	30	4.5%	
				Opiates	15	2.2%	
				Other	219	32.6%	
				Total	671	100.0%	

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ile, and \$0.15 for syringe sale.
n \$1 to \$6 million for San Francisco,

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U.S. Department of Housing and Urban Development Office of Policy Development and Research
Costs Associated with First-Time Homelessness for Individuals and Families

Exhibit 1: Average Cost Per Household Per Month for Homeless Program Types^a

Individual Sites	Emergency Shelter	Transitional Housing	Permanent Supportive Housing	2006 Fair Market Rent for One-bedroom Unit ^b
Des Moines	\$581	\$1,255	\$537	\$549
Houston	\$1,335	\$1,654	\$1,211	\$612
Jacksonville	\$685	\$870	\$882	\$643

Family Sites	Emergency Shelter	Transitional Housing	Permanent Supportive Housing	2006 Fair Market Rent for Two-bedroom Unit ^b
District of Columbia	\$3,097	\$2,167	\$1,251	\$1,225
Houston	\$1,391	\$3,211	\$799	\$743
Kalamazoo	\$1,614	\$813	\$881	\$612
Upstate South Carolina	\$599	\$2,269	\$1,209	\$661

Note: All costs reported in 2006 dollars.

a: Costs shown reflect weighted averages by program type. Ranges represent the averages of different housing models within a program type. Costs only represent homeless system costs and do not include the value of mainstream system costs that may be incurred while individuals or families reside in these programs.

HUD FMR for 2019	1-BR	2-BR
Cleveland MSA, 2019 FMR	\$678	\$836
Akron MSA, 2019 FMR	\$623	\$810

	Emergency Shelter as a % of FMR	Transitional Housing as a % of FMR	Supportive Housing as a % of FMR
	105.8%	228.6%	97.8%
	218.1%	270.3%	197.8%
	106.5%	135.3%	137.2%

Average % of FMR	143.5%	211.4%	144.3%
2019 Est. Cost, Cleveland MSA	\$973	\$1,433	\$978
2019 Est. Cost, Akron MSA	\$894	\$1,317	\$899

	252.8%	176.9%	102.1%
	187.2%	432.2%	107.5%
	263.7%	132.8%	144.0%
	90.6%	343.3%	182.9%
Average % of FMR	198.6%	271.3%	134.1%
2019 Est. Cost, Cleveland MSA	\$1,200	\$1,767	\$1,206
2019 Est. Cost, Akron MSA	\$1,162	\$1,712	\$1,169

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CoC Number	CoC Name	CoC Category	Overall Homeless, 2018	Sheltered ES Homeless, 2018	Sheltered TH Homeless, 2018	Sheltered SH Homeless, 2018	Sheltered Total Homeless, 2018	Unsheltered Homeless, 2018
OH-502	Cleveland/Cuyahoga County CoC	Suburban CoCs	1,808	1,597	95	38	1,730	78
OH-506	Akron, Barberton/Summit County CoC	Suburban CoCs	587	270	167	17	454	133

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[A] Campaign costs between 2013 and March 2016	\$246,915,233	MacMonegle et al (2018), Table 1
[B] Months of campaign running	26	MacMonegle et al (2018): Since February 2014, the Food and Drug Administration has conducted a national tobacco public education campaign designed to prevent the initiation of cigarette smoking among youth aged 12 to 17 years who have never smoked but are susceptible to smoking (susceptible nonsmokers) and to discourage further smoking among youth who have experimented with smoking in the past (experimenters). The Real Cost has appeared on national TV, radio, the Internet, and out-of-home displays, as well as in magazines and movie theaters. The central theme of the campaign is: "Every cigarette costs you something." In the first 3 years of advertising, campaign themes focused on the cosmetic effects of smoking, loss of control caused by addiction, and the dangerous mix of toxic chemicals in cigarette smoke.
[C] Average cost per month running	\$9,496,740	= [A]/[B].
[D] Target audience for campaign	25,002,234	12-17 national population (average 2014-2016)
[E] Cost per target per month of campaign	\$0.38	= [C]/[D]

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PEPSYASEX-Geography-United States: Annual Estimates of the Resident Population by Single Year of Age and Sex for the United States, States, and Puerto Rico Commonwealth: April 1 2017 Population Estimates

Note: This is a modified view of the original table.

Age	April 1, 2010		Population Estimate (as of July 1)							
	Census	Estimates	2010	2011	2012	2013	2014	2015	2016	2017
	Both Sexes	Both Sexes	Both Sexes	Both Sexes	Both Sexes	Both Sexes	Both Sexes	Both Sexes	Both Sexes	Both Sexes
Total	308,745,538	308,758,105	309,338,421	311,644,280	313,993,272	316,234,505	318,622,525	321,039,839	323,405,935	325,719,178
0	3,944,153	3,944,160	3,951,454	3,962,971	3,926,486	3,931,208	3,954,725	3,984,294	3,955,377	3,939,295
1	3,978,070	3,978,090	3,957,695	3,966,056	3,977,264	3,942,441	3,948,689	3,973,189	4,004,017	3,975,252
2	4,096,929	4,096,939	4,090,616	3,970,491	3,978,648	3,991,295	3,958,296	3,965,536	3,990,991	4,021,775
3	4,119,040	4,119,051	4,111,682	4,101,643	3,981,321	3,990,699	4,005,424	3,973,376	3,981,326	4,006,755
4	4,063,170	4,063,186	4,077,326	4,121,485	4,111,444	3,992,298	4,003,684	4,019,335	3,987,866	3,995,783
5	4,056,858	4,056,872	4,064,480	4,087,056	4,131,048	4,121,794	4,004,373	4,016,658	4,032,787	4,001,318
6	4,066,381	4,066,412	4,072,889	4,074,516	4,096,654	4,141,144	4,133,300	4,016,732	4,029,444	4,045,532
7	4,030,579	4,030,594	4,042,967	4,082,870	4,084,201	4,106,863	4,152,751	4,145,829	4,029,700	4,042,379
8	4,046,486	4,046,497	4,025,495	4,052,889	4,092,669	4,094,674	4,118,570	4,165,408	4,158,968	4,042,838
9	4,148,353	4,148,369	4,125,317	4,035,461	4,062,842	4,103,296	4,106,389	4,131,317	4,178,605	4,172,171
10	4,172,541	4,172,559	4,186,959	4,135,458	4,045,601	4,073,237	4,115,033	4,119,269	4,144,625	4,191,919
11	4,114,415	4,114,443	4,115,452	4,197,307	4,145,939	4,056,173	4,085,016	4,128,022	4,132,611	4,157,962
12	4,106,243	4,106,261	4,113,239	4,126,020	4,208,003	4,156,759	4,067,899	4,097,932	4,141,353	4,145,953
13	4,118,013	4,118,055	4,119,585	4,124,131	4,136,655	4,219,019	4,169,022	4,081,296	4,111,886	4,155,315
14	4,165,982	4,166,059	4,145,490	4,131,295	4,135,424	4,148,560	4,232,526	4,183,831	4,096,727	4,127,305
15	4,242,820	4,242,946	4,230,902	4,158,739	4,143,882	4,149,009	4,164,225	4,249,635	4,201,611	4,114,560
16	4,316,139	4,316,311	4,313,090	4,247,235	4,174,315	4,160,427	4,167,605	4,184,373	4,270,670	4,222,691
17	4,395,295	4,395,475	4,376,158	4,334,584	4,267,964	4,195,438	4,183,519	4,192,344	4,210,248	4,296,575
18	4,500,855	4,501,114	4,490,385	4,401,461	4,359,020	4,293,061	4,222,786	4,213,143	4,223,290	4,241,226
19	4,585,234	4,585,701	4,570,789	4,518,349	4,427,917	4,385,466	4,322,239	4,254,939	4,245,565	4,256,608
20	4,519,129	4,519,556	4,568,055	4,598,385	4,546,920	4,453,700	4,412,489	4,353,486	4,286,564	4,276,745
21	4,354,294	4,354,603	4,387,520	4,594,545	4,630,398	4,574,494	4,482,033	4,445,074	4,386,414	4,318,304
22	4,264,642	4,264,946	4,286,502	4,413,679	4,626,348	4,661,047	4,605,757	4,517,314	4,480,595	4,420,763
23	4,198,571	4,198,859	4,216,698	4,312,907	4,444,658	4,656,683	4,694,117	4,641,661	4,553,777	4,515,308
24	4,249,363	4,249,609	4,243,224	4,242,863	4,343,285	4,473,760	4,688,618	4,729,252	4,676,663	4,587,515
25	4,262,350	4,262,583	4,289,018	4,268,587	4,272,877	4,371,120	4,503,882	4,722,239	4,763,194	4,708,854
26	4,152,305	4,152,598	4,160,508	4,312,376	4,297,039	4,299,622	4,400,262	4,536,357	4,754,096	4,794,326
27	4,248,869	4,249,132	4,236,809	4,182,321	4,338,729	4,322,526	4,328,101	4,432,055	4,567,423	4,784,135
28	4,215,249	4,215,502	4,247,376	4,257,105	4,206,443	4,361,578	4,348,951	4,358,168	4,461,130	4,595,406
29	4,223,076	4,223,292	4,210,139	4,265,555	4,279,311	4,228,116	4,386,181	4,377,349	4,385,585	4,487,739
30	4,285,668	4,285,877	4,304,114	4,226,341	4,285,186	4,299,431	4,251,419	4,412,626	4,403,377	4,410,631
31	3,970,218	3,970,416	4,042,424	4,318,453	4,243,591	4,302,255	4,319,291	4,274,952	4,434,930	4,425,408
32	3,986,847	3,987,041	3,967,447	4,054,769	4,333,504	4,258,685	4,319,429	4,339,718	4,294,385	4,453,718
33	3,880,150	3,880,318	3,933,404	3,978,681	4,067,769	4,346,508	4,273,924	4,337,144	4,356,692	4,310,977
34	3,839,216	3,839,372	3,822,120	3,943,239	3,990,632	4,078,962	4,359,882	4,289,883	4,352,115	4,371,478
35	3,956,434	3,956,625	3,948,190	3,831,104	3,953,998	4,000,897	4,090,363	4,373,944	4,303,181	4,364,947
36	3,802,087	3,802,236	3,830,090	3,955,372	3,840,281	3,962,434	4,010,887	4,102,517	4,385,025	4,313,987
37	3,934,445	3,934,593	3,896,623	3,836,098	3,963,305	3,847,788	3,971,081	4,021,765	4,112,091	4,394,351
38	4,121,880	4,122,089	4,080,090	3,901,363	3,842,912	3,969,573	3,855,833	3,980,639	4,030,605	4,120,468
39	4,364,796	4,364,949	4,324,292	4,083,814	3,906,612	3,848,177	3,976,512	3,864,518	3,988,387	4,038,244
40	4,383,274	4,383,450	4,387,318	4,325,717	4,087,369	3,910,240	3,853,387	3,983,367	3,870,893	3,994,423
41	4,114,985	4,115,155	4,163,365	4,386,968	4,327,314	4,089,720	3,913,779	3,858,785	3,987,834	3,875,738
42	4,076,104	4,076,260	4,082,649	4,162,181	4,386,985	4,327,551	4,091,708	3,917,161	3,861,852	3,990,700
43	4,105,105	4,105,285	4,093,719	4,080,591	4,161,015	4,385,208	4,327,303	4,093,397	3,918,537	3,863,455

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44	4,211,496	4,211,684	4,178,367	4,090,705	4,078,611	4,158,497	4,383,470	4,327,295	4,093,328	3,919,057
45	4,508,868	4,509,044	4,438,446	4,173,540	4,087,295	4,074,594	4,155,383	4,381,059	4,324,551	4,091,579
46	4,519,761	4,519,941	4,529,607	4,431,746	4,168,182	4,081,816	4,070,035	4,151,692	4,376,488	4,320,583
47	4,535,265	4,535,450	4,535,360	4,520,780	4,424,250	4,161,224	4,076,200	4,065,383	4,146,627	4,370,964
48	4,538,796	4,538,968	4,534,558	4,524,448	4,511,059	4,414,834	4,153,395	4,069,724	4,058,776	4,140,010
49	4,605,901	4,606,060	4,598,974	4,521,744	4,512,793	4,499,442	4,404,466	4,144,843	4,061,192	4,050,722
50	4,660,295	4,660,457	4,646,111	4,584,099	4,508,304	4,498,950	4,486,472	4,392,884	4,133,931	4,051,078
51	4,464,631	4,464,779	4,498,875	4,629,595	4,568,158	4,491,995	4,483,424	4,472,068	4,378,704	4,121,394
52	4,500,846	4,500,963	4,480,498	4,480,792	4,611,354	4,549,602	4,474,669	4,466,906	4,455,485	4,363,205
53	4,380,354	4,380,489	4,439,343	4,460,552	4,461,212	4,591,335	4,530,188	4,456,110	4,448,135	4,437,426
54	4,291,999	4,292,120	4,288,408	4,417,728	4,439,455	4,439,894	4,569,843	4,509,126	4,435,174	4,427,991
55	4,254,709	4,254,809	4,258,899	4,265,476	4,394,770	4,415,993	4,416,633	4,546,665	4,485,896	4,413,266
56	4,037,513	4,037,601	4,093,115	4,234,860	4,241,425	4,369,037	4,390,423	4,391,484	4,520,972	4,461,346
57	3,936,386	3,936,450	3,946,482	4,067,978	4,209,314	4,214,850	4,341,770	4,363,359	4,364,273	4,493,573
58	3,794,928	3,795,015	3,802,411	3,920,277	4,041,657	4,181,182	4,186,598	4,312,945	4,334,230	4,335,891
59	3,641,269	3,641,349	3,694,225	3,775,188	3,893,007	4,012,567	4,151,512	4,156,767	4,281,943	4,303,880
60	3,621,131	3,621,214	3,616,676	3,666,218	3,746,688	3,862,888	3,981,755	4,119,957	4,124,852	4,249,921
61	3,492,596	3,492,656	3,520,129	3,587,599	3,636,530	3,715,444	3,830,701	3,948,750	4,085,979	4,091,662
62	3,563,182	3,563,260	3,495,097	3,488,936	3,556,423	3,603,852	3,682,166	3,796,367	3,913,573	4,050,159
63	3,483,884	3,483,943	3,652,182	3,460,878	3,455,685	3,521,985	3,569,056	3,646,303	3,758,910	3,875,907
64	2,657,131	2,657,194	2,706,101	3,613,910	3,424,934	3,418,893	3,485,992	3,531,786	3,607,574	3,720,053
65	2,680,761	2,680,815	2,678,528	2,675,466	3,573,951	3,385,678	3,380,825	3,447,219	3,492,271	3,567,978
66	2,639,141	2,639,209	2,621,359	2,645,920	2,643,322	3,530,144	3,344,794	3,340,042	3,405,526	3,451,069
67	2,649,365	2,649,426	2,693,743	2,585,932	2,611,346	2,608,170	3,484,014	3,300,801	3,296,304	3,361,747
68	2,323,672	2,323,736	2,359,862	2,653,842	2,548,173	2,573,554	2,571,100	3,434,771	3,254,306	3,251,249
69	2,142,324	2,142,381	2,167,896	2,321,680	2,611,661	2,507,086	2,533,751	2,531,174	3,381,146	3,204,338
70	2,043,121	2,043,178	2,062,660	2,129,537	2,281,747	2,565,768	2,464,843	2,490,999	2,488,370	3,324,662
71	1,949,323	1,949,391	1,953,665	2,022,881	2,089,893	2,238,309	2,519,507	2,419,540	2,446,446	2,443,843
72	1,864,275	1,864,324	1,883,894	1,912,282	1,981,539	2,046,427	2,194,211	2,468,839	2,372,281	2,399,286
73	1,736,960	1,737,022	1,750,372	1,840,052	1,869,214	1,936,203	2,002,134	2,145,541	2,415,320	2,321,473
74	1,684,487	1,684,563	1,686,065	1,705,554	1,794,560	1,821,988	1,889,901	1,953,194	2,094,035	2,357,801
75	1,620,077	1,620,158	1,631,948	1,638,654	1,659,192	1,744,755	1,773,949	1,839,060	1,901,800	2,039,236
76	1,471,070	1,471,157	1,481,772	1,581,379	1,589,512	1,608,437	1,694,182	1,721,269	1,785,775	1,847,158
77	1,455,330	1,455,414	1,449,228	1,430,871	1,529,055	1,535,801	1,556,807	1,638,604	1,666,031	1,729,114
78	1,400,123	1,400,205	1,402,261	1,394,574	1,378,369	1,471,959	1,481,179	1,500,111	1,580,281	1,607,240
79	1,371,195	1,371,312	1,355,002	1,343,797	1,338,237	1,321,224	1,414,026	1,421,387	1,440,868	1,518,513
80	1,308,511	1,308,608	1,319,813	1,292,519	1,283,536	1,277,082	1,263,371	1,350,788	1,359,236	1,378,494
81	1,212,865	1,212,976	1,212,664	1,252,511	1,228,264	1,218,481	1,215,525	1,200,591	1,285,201	1,293,831
82	1,161,421	1,161,546	1,158,424	1,143,974	1,183,647	1,159,174	1,153,165	1,148,785	1,135,811	1,216,640
83	1,074,809	1,074,941	1,081,505	1,085,413	1,073,832	1,109,606	1,089,796	1,082,286	1,079,926	1,068,110
84	985,721	985,854	987,098	1,005,470	1,011,161	998,639	1,035,631	1,014,952	1,009,519	1,008,215
85+	5,493,433	5,495,003	5,543,134	5,701,892	5,878,177	6,014,210	6,154,403	6,278,584	6,381,877	6,468,682
Median age (years)	37.2	37.2	37.2	37.3	37.5	37.6	37.7	37.8	37.9	38.0

Note: The estimates are based on the 2010

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Census and reflect changes to the April 1, 2010 population due to the Count Question Resolution program and geographic program revisions. Median age is calculated based on single year of age. For population estimates methodology statements, see <http://www.census.gov/programs->

Suggested Citation:

Annual Estimates of the Resident Population by Single Year of Age and Sex for the United States, States, and Puerto Rico Commonwealth: April 1, 2010 to July 1, 2017

Source: U.S. Census Bureau, Population Division

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, 2010 to July 1, 2017

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Notes	County	County Code	Yearly July 1st Estimates	Yearly July 1st Estimates Code	Population
	Cuyahoga County, OH	39035	2014	2014	230135
	Cuyahoga County, OH	39035	2015	2015	227652
	Cuyahoga County, OH	39035	2016	2016	224345
	Cuyahoga County, OH	39035	2017	2017	220086
Total	Cuyahoga County, OH	39035			902218
	Summit County, OH	39153	2014	2014	98854
	Summit County, OH	39153	2015	2015	97511
	Summit County, OH	39153	2016	2016	95716
	Summit County, OH	39153	2017	2017	94300
Total	Summit County, OH	39153			386381
Total					1288599

Dataset: Bridged-Race Population Estimates 1990-2017

Query Parameters:

Age: 12 years; 13 years; 14 years; 15 years; 16 years; 17 years; 18 years; 19 years; 20 years; 21 years; 22 years; 23 years; 24 years; 25 years

States: Cuyahoga County, OH (39035); Summit County, OH (39153)

Yearly July 1st Estimates: 2014; 2015; 2016; 2017

Group By: County; Yearly July 1st Estimates

Show Totals: True

Show Zero Values: False

Data Table: Default

Help: See <http://wonder.cdc.gov/wonder/help/bridged-race.html> for more information.

Query Date: Mar 16, 2019 6:07:55 PM

Suggested Citation: United States Department of Health and Human Services (US DHHS), Centers for Disease Control and Prevention (CDC), National Center for Health Statistics (NCHS), Bridged-Race Population Estimates, United States July 1st resident population by state, county, age, sex, bridged-race, and Hispanic origin. Compiled from 1990-1999 bridged-race intercensal population estimates (released by NCHS on 7/26/2004); revised bridged-race 2000-2009 intercensal population estimates (released by NCHS on 10/26/2012); and bridged-race Vintage 2017 (2010-2017) postcensal population estimates (released by NCHS on 6/27/2018). Available on CDC WONDER Online Database. Accessed at <http://wonder.cdc.gov/bridged-race-v2017.html> on Mar 16, 2019

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Footnotes:

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1. Estimates for 1990-1999 are bridged-race intercensal population estimates of the July 1 resident population. Estimates for 2000-2009 are revised bridged-race intercensal estimates of the July 1 resident population. Estimates for 2010-2017 are bridged-race Vintage 2017 postcensal estimates of the July 1 resident population. These estimates were prepared by the Census Bureau in collaboration with NCHS.

Caveats:

1. County geography changes over time. New counties are created and old counties are deleted or their boundaries are modified. The county codes and names for years 1990-1999 are based on Census 2000 geography; those for year 2000 and later are based on Census 2010 geography.
2. The U.S. Census Bureau annually releases unbridged population estimates for five-year age groups and race at the county level (<http://www.census.gov/popest/research/eval-estimates/eval-est2010.html>). The Census Bureau does not release bridged-race or unbridged estimates by single year of age at the county level due to concerns about the reliability of these estimates. However, these estimates are provided to the National Center for Health Statistics to meet programmatic needs such as the creation of age groupings that differ from the standard groupings used by the Census Bureau. Users of the single-year-of-age county-level bridged race population estimates should carefully consider the limited reliability of these estimates.

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Ohio Development Services Agency, Population Projections by Age and Sex, 2015 to 2050

<i>CUYAHOGA COUNTY</i>	2020	2035	2020-2035
			CAGR
10-14	71,010	66,890	
15-19	73,530	73,070	
20-24	75,190	69,300	
10-24 population	219,730	209,260	(0.3%)
Total population	1,209,550	1,131,380	(0.4%)

<i>SUMMIT COUNTY</i>	2020	2035	2020-2035
			CAGR
10-14	31,430	31,410	
15-19	33,820	34,650	
20-24	34,040	32,410	
10-24 population	99,290	98,470	(0.1%)
Total population	534,150	525,600	(0.1%)

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National Association of Social Workers, Standards for School Social Work Services (2012) at p.18: "School social work services should be provided at a ratio of one school social worker to each school building serving up to 250 general education students, or a ratio of 1:250 students. When a school social worker is providing services to students with intensive needs, a lower ratio, such as 1:50, is suggested."

	Cuyahoga	Summit	
Standard student-social worker ratio	250	250	[A]
Intensive needs student-social worker ratio	50	50	[B]
# of students, grades 6-12	106,380	45,599	[C]
Assumed % of students with more intensive needs related to opioid crisis	25%	25%	[D]
Required student-social worker ratio implied by [D]	200	200	$[E]=[A]*(1-[D])+[B]*[D]$
# of social workers required based on ratio in [E]	532	228	$[F]=[C]/[E]$
# of social workers using standard ratio in [A]	426	182	$[G]=[C]/[A]$
Social workers required to help students affected by opioid crisis	106	46	$[H]=[F]-[G]$
Estimated # of middle schools / high schools*	282	93	[I]
Implied % of schools requiring additional social worker	37.6%	49.5%	$[J]=[H]/[I]$

**Schools where 25% or more of enrollment is in grades 6-12*

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Cuyahoga County, public enrollment, grade 6-12
Summit County, public enrollment, grade 6-1291,274
40,277

pre-k kindergarten	grade 1	grade 2	grade 3	grade 4	grade 5	grade 6	grade 7	grade 8	grade 9	grade 10	grade 11	grade 12	ungraded	ungraded	
4,177	11,820	11,980	12,203	12,719	12,351	12,401	11,925	12,662	12,528	14,145	13,569	13,164	13,281	0	0
395	5,228	5,294	5,305	5,561	5,577	5,445	5,435	5,416	5,574	6,030	5,935	5,956	5,931	0	0

Cuyahoga County
Summit County

Est # of MS/HS

212
67

ELSI Export

National Center for Education Statistics - <http://nces.ed.gov/ccd/elsi/>

This is a Public School based table with the following filters applied: State(s) (All Years): All 50 + DC; County Name [Public School] (All Years: 2016-17): CUYAHOGA COUNTY, SUMMIT COUNTY

School Name	State Name	County Name	Prekindergarten	Kindergarten	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Grade 9	Grade 10	Grade 11	Grade 12	Grade 13	Ungraded	Grade 6-12 % Enrollment
	[Public School]	[Public School]	Students	Students	Students	Students	Students	Students	Students	Students	Students	Students	Students	Students	Students	Students	Students	Students	
	Latest available year	2016-17	2016-17	2016-17	2016-17	2016-17	2016-17	2016-17	2016-17	2016-17	2016-17	2016-17	2016-17	2016-17	2016-17	2016-17	2016-17	2016-17	
ABRAHAM LINCOLN SCHOOL	Ohio	Cuyahoga Co	71	230	248	†	†	†	†	†	†	†	†	†	†	†	†	†	0.00%
ADLAI STEVENSON SCHOOL	Ohio	Cuyahoga Co	42	51	46	42	51	50	52	39	38	38	1	†	†	†	†	†	25.78%
ADRIAN ELEMENTARY SCHOOL	Ohio	Cuyahoga Co	†	81	75	61	74	†	†	†	†	†	†	†	†	†	†	†	0.00%
ALBERT EINSTEIN ACADEMY FOR LETTERS ARTS AND SCIENCES	Ohio	Cuyahoga Co	†	†	†	†	†	11	29	19	32	28	26	33	37	17	†	†	82.76%
ALBION ELEMENTARY SCHOOL	Ohio	Cuyahoga Co	†	85	88	101	100	115	†	†	†	†	†	†	†	†	†	†	0.00%
ALFRED BENESCH	Ohio	Cuyahoga Co	†	53	46	51	45	36	33	24	30	29	2	†	†	†	†	†	24.36%
ALMIRA	Ohio	Cuyahoga Co	16	52	55	52	41	53	48	51	57	56	†	†	†	†	†	†	34.10%
ANDREW J RICKOFF	Ohio	Cuyahoga Co	27	59	57	63	45	47	36	28	29	35	1	†	†	†	†	†	21.78%
ANTON GRDINA	Ohio	Cuyahoga Co	21	52	48	33	47	43	29	16	34	29	†	†	†	†	†	†	22.44%
APEX ACADEMY	Ohio	Cuyahoga Co	†	77	88	78	75	67	58	51	58	55	†	†	†	†	†	†	27.02%
ARBOR ELEMENTARY SCHOOL	Ohio	Cuyahoga Co	†	80	88	84	107	108	99	†	†	†	†	†	†	†	†	†	0.00%
ARTEMUS WARD	Ohio	Cuyahoga Co	31	57	42	64	58	46	61	47	52	60	†	†	†	†	†	†	30.69%
ARTHUR ROAD ELEMENTARY SCHOOL	Ohio	Cuyahoga Co	75	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	0.00%
BALLARD BRADY MIDDLE SCHOOL	Ohio	Cuyahoga Co	†	†	†	†	†	†	†	150	154	164	†	†	†	†	†	†	100.00%
BARACK OBAMA SCHOOL	Ohio	Cuyahoga Co	†	†	†	†	5	281	272	†	†	†	†	†	†	†	†	†	0.00%
BARD EARLY COLLEGE CLEVELAND	OHIO	Cuyahoga Co	†	†	†	†	†	†	†	†	†	†	116	112	103	15	†	†	100.00%
BASSETT ELEMENTARY SCHOOL	Ohio	Cuyahoga Co	†	67	75	74	92	71	†	†	†	†	†	†	†	†	†	†	0.00%
BAY HIGH SCHOOL	Ohio	Cuyahoga Co	†	†	†	†	†	†	†	†	†	†	210	205	211	211	†	†	100.00%
BAY MIDDLE SCHOOL	Ohio	Cuyahoga Co	†	†	†	†	†	†	197	189	211	178	†	†	†	†	†	†	74.58%
BEACHWOOD HIGH SCHOOL	Ohio	Cuyahoga Co	†	†	†	†	†	†	†	†	†	†	132	122	175	202	†	†	100.00%
BEACHWOOD MIDDLE SCHOOL	Ohio	Cuyahoga Co	†	†	†	†	†	†	†	101	127	135	†	†	†	†	†	†	100.00%
BEDFORD HIGH SCHOOL	Ohio	Cuyahoga Co	†	†	†	†	†	†	†	†	†	†	283	265	246	231	†	†	100.00%
BELLA ACADEMY OF EXCELLENCE	Ohio	Cuyahoga Co	†	46	45	45	44	40	40	31	†	†	†	†	†	†	†	†	10.65%
BENJAMIN FRANKLIN	Ohio	Cuyahoga Co	30	60	75	62	67	70	55	79	67	75	†	†	†	†	†	†	34.53%
BEREA-MIDPARK HIGH SCHOOL	Ohio	Cuyahoga Co	†	†	†	†	†	†	†	†	†	†	†	516	575	513	†	†	100.00%
BIG CREEK ELEMENTARY SCHOOL	Ohio	Cuyahoga Co	59	113	132	115	110	102	†	†	†	†	†	†	†	†	†	†	0.00%
BIRCH ELEMENTARY SCHOOL	Ohio	Cuyahoga Co	†	127	107	123	†	†	†	†	†	†	†	†	†	†	†	†	0.00%
BLUESTONE ELEMENTARY SCHOOL	Ohio	Cuyahoga Co	†	96	100	99	103	105	108	4	†	†	†	†	†	†	†	†	0.65%
BOLTON	Ohio	Cuyahoga Co	35	34	35	44	36	34	24	23	22	21	†	†	†	†	†	†	21.43%
BOULEVARD ELEMENTARY SCHOOL	Ohio	Cuyahoga Co	†	50	49	37	48	57	61	†	†	†	†	†	†	†	†	†	0.00%
BOULEVARD ELEMENTARY SCHOOL	Ohio	Cuyahoga Co	†	74	63	74	72	73	†	†	†	†	†	†	†	†	†	†	0.00%
BRECKSVILLE-BROADVIEW HEIGHTS HIGH SCHOOL	Ohio	Cuyahoga Co	†	†	†	†	†	†	†	†	†	†	313	377	307	363	†	†	100.00%
BRECKSVILLE-BROADVIEW HEIGHTS MIDDLE SCHOOL	Ohio	Cuyahoga Co	†	†	†	†	†	†	1	273	328	331	†	†	†	†	†	†	99.89%
BROADWAY ACADEMY	Ohio	Cuyahoga Co	†	47	38	44	41	35	37	28	31	38	†	†	†	†	†	†	28.61%
BROOK PARK MEMORIAL ELEMENTARY SCHOOL	Ohio	Cuyahoga Co	143	84	78	100	96	111	†	†	†	†	†	†	†	†	†	†	0.00%
BROOKLYN ELEMENTARY SCHOOL	Ohio	Cuyahoga Co	55	68	86	72	88	†	†	†	†	†	†	†	†	†	†	†	0.00%
BROOKLYN HIGH SCHOOL	Ohio	Cuyahoga Co	†	†	†	†	†	†	†	†	†	107	98	122	112	132	†	†	100.00%
BROOKLYN INTERMEDIATE SCHOOL	Ohio	Cuyahoga Co	†	†	†	†	†	85	91	116	111	†	†	†	†	†	†	†	56.33%
BROOKVIEW ELEMENTARY SCHOOL	Ohio	Cuyahoga Co	57	77	65	85	85	75	†	†	†	†	†	†	†	†	†	†	0.00%
BRUSH HIGH SCHOOL	Ohio	Cuyahoga Co	†	†	†	†	†	†	†	†	†	†	306	270	276	281	†	†	100.00%
BRYDEN ELEMENTARY SCHOOL	Ohio	Cuyahoga Co	†	69	78	92	†	†	†	†	†	†	†	†	†	†	†	†	0.00%
BUHRER	Ohio	Cuyahoga Co	16	48	49	46	53	42	40	35	30	32	†	†	†	†	†	†	24.81%
BUTTERNUT ELEMENTARY SCHOOL	Ohio	Cuyahoga Co	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	N/A
CALEDONIA ELEMENTARY SCHOOL	Ohio	Cuyahoga Co	†	32	44	39	33	35	48	20	†	†	†	†	†	†	†	†	7.97%
CAMPUS INTERNATIONAL SCHOOL	Ohio	Cuyahoga Co	†	77	79	76	77	74	81	56	49	46	†	†	†	†	†	†	24.55%
CANTERBURY ELEMENTARY SCHOOL	Ohio	Cuyahoga Co	†	67	70	61	66	70	54	†	†	†	†	†	†	†	†	†	0.00%
CARYLWOOD INTERMEDIATE SCHOOL	Ohio	Cuyahoga Co	†	†	†	†	†	105	125	113	†	†	†	†	†	†	†	†	32.94%
CASE	Ohio	Cuyahoga Co	19	33	44	47	43	35	34	27	35	25	1	†	†	†	†	†	25.66%
CENTRAL ELEMENTARY SCHOOL	Ohio	Cuyahoga Co	†	†	†	†	†	278	273	†	†	†	†	†	†	†	†	†	0.00%
CENTRAL PRIMARY SCHOOL	Ohio	Cuyahoga Co	†	101	128	133	137	†	†	†	†	†	†	†	†	†	†	†	0.00%
CHAGRIN FALLS HIGH SCHOOL	Ohio	Cuyahoga Co	†	†	†	†	†	†	†	†	†	†	183	184	220	211	†	†	100.00%
CHAGRIN FALLS INTERMEDIATE ELEMENTARY SCHOOL	Ohio	Cuyahoga Co	†	†	†	†	†	120	150	148	†	†	†	†	†	†	†	†	35.41%
CHAGRIN FALLS MIDDLE SCHOOL	Ohio	Cuyahoga Co	†	†	†	†	†	†	†	†	187	155	†	†	†	†	†	†	100.00%
CHAMBERS ELEMENTARY SCHOOL	Ohio	Cuyahoga Co	†	48	42	60	49	45	45	48	†	†	†	†	†	†	†	†	14.24%
CHAPELSIDE CLEVELAND ACADEMY	Ohio	Cuyahoga Co	†	50	29	34	45	46	34	27	†	†	†	†	†	†	†	†	10.19%
CHAPMAN ELEMENTARY SCHOOL	Ohio	Cuyahoga Co	†	50	50	52	55	60	61	†	†	†	†	†	†	†	†	†	0.00%
CHARDON HILLS ELEMENTARY SCHOOL	Ohio	Cuyahoga Co	†	72	86	78	90	95	95	†	†	†	†	†	†	†	†	†	0.00%
CHARLES A MOONEY SCHOOL	Ohio	Cuyahoga Co	30	45	46	52	51	51	44	44	55	65	1	†	†	†	†	†	34.09%
CHARLES DICKENS SCHOOL	Ohio	Cuyahoga Co	16	27	45	43	53	48	30	30	49	40	†	†	†	†	†	†	31.23%
CHARLES W ELLIOT SCHOOL	Ohio	Cuyahoga Co	14	29	24	30	31	26	31	28	24	32	1	†	†	†	†	†	31.48%
CHESTNUT INTERMEDIATE ELEMENTARY SCHOOL	Ohio	Cuyahoga Co	†	†	†	†	74	90	69	87	†	†	†	†	†	†	†	†	27.19%
CHIPPEWA ELEMENTARY SCHOOL	Ohio	Cuyahoga Co	†	70	72	87	78	†	†	†	†	†	†	†	†	†	†	†	0.00%
CITIZENS ACADEMY	Ohio	Cuyahoga Co	†	65	59	74	77	79	76	†	†	†	†	†	†	†	†	†	0.00%

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This is a Public School based table with the following filters applied: State(s) [All Years]: All 50 + DC; County Name [Public School] [All Years: 2016-17]: CUYAHOGA COUNTY, SUMMIT COUNTY

School Name	State Name	County	Prekinderga	Kindergarte	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Grade 9	Grade 10	Grade 11	Grade 12	Grade 13	Ungraded	Grade 6-12 % Enrollment
	[Public School]	Name	rtens	n Students	n Students	n Students	n Students	n Students	n Students	n Students	n Students	n Students	n Students	n Students	n Students	n Students	n Students	n Students	
	Latest available year	[Public School]	[Public School]	[Public School]	[Public School]	[Public School]	[Public School]	[Public School]	[Public School]	[Public School]	[Public School]	[Public School]	[Public School]	[Public School]	[Public School]	[Public School]	[Public School]	[Public School]	
2016-17	2016-17	2016-17	2016-17	2016-17	2016-17	2016-17	2016-17	2016-17	2016-17	2016-17	2016-17	2016-17	2016-17	2016-17	2016-17	2016-17	2016-17	2016-17	
CITIZENS ACADEMY EAST	Ohio	Cuyahoga Co	†	72	75	78	81	70	52	†	†	†	†	†	†	†	†	†	0.00%
CITIZENS ACADEMY SOUTHEAST	OHIO	Cuyahoga Co	†	86	99	51	38	†	†	†	†	†	†	†	†	†	†	†	0.00%
CITIZENS LEADERSHIP ACADEMY	Ohio	Cuyahoga Co	†	†	†	†	†	†	†	87	95	98	†	†	†	†	†	†	100.00%
CLARA E WESTROPP SCHOOL	Ohio	Cuyahoga Co	27	34	47	34	52	44	44	32	35	43	†	†	†	†	†	†	28.06%
CLARK SCHOOL	Ohio	Cuyahoga Co	16	85	76	65	79	67	63	58	60	54	†	†	†	†	†	†	27.61%
CLEVELAND ACADEMY FOR SCHOLARSHIP TECHNO	Ohio	Cuyahoga Co	†	†	†	†	†	†	†	†	†	†	37	30	28	38	†	†	100.00%
CLEVELAND ARTS AND SOCIAL SCIENCES ACADEMY	Ohio	Cuyahoga Co	†	55	38	43	44	38	35	37	22	18	†	†	†	†	†	†	23.33%
CLEVELAND COLLEGE PREPARATORY SCHOOL	Ohio	Cuyahoga Co	†	31	28	33	37	26	37	35	31	25	†	†	†	†	†	†	32.16%
CLEVELAND EARLY COLLEGE HIGH	Ohio	Cuyahoga Co	†	†	†	†	†	†	†	†	†	†	93	87	67	53	†	†	100.00%
CLEVELAND ENTREPRENEURSHIP PREPARATORY SC	Ohio	Cuyahoga Co	†	†	†	†	†	†	87	94	82	67	†	†	†	†	†	†	73.64%
CLEVELAND HEIGHTS HIGH SCHOOL	Ohio	Cuyahoga Co	†	†	†	†	†	†	†	†	†	†	496	427	408	378	†	†	100.00%
CLEVELAND HIGH SCHOOL FOR THE DIGITAL ARTS	OHIO	Cuyahoga Co	†	†	†	†	†	†	†	†	†	†	114	77	66	†	†	†	100.00%
CLEVELAND SCHOOL OF ARCHITECTURE & DESIGN	Ohio	Cuyahoga Co	†	†	†	†	†	†	†	†	†	†	87	88	76	65	†	†	100.00%
CLEVELAND SCHOOL OF ARTS LOWER CAMPUS	Ohio	Cuyahoga Co	17	30	42	44	39	36	50	56	44	†	†	†	†	†	†	†	27.93%
CLEVELAND SCHOOL OF SCIENCE & MEDICINE	Ohio	Cuyahoga Co	†	†	†	†	†	†	†	†	†	†	117	105	95	99	†	†	100.00%
CLEVELAND SCHOOL OF THE ARTS HIGH SCHOOL	Ohio	Cuyahoga Co	†	†	†	†	†	†	†	†	2	84	144	133	106	100	†	†	100.00%
COLLINWOOD HIGH SCHOOL	Ohio	Cuyahoga Co	†	†	†	†	†	†	1	1	1	1	92	92	71	104	†	†	99.72%
COLUMBUS INTERMEDIATE SCHOOL	Ohio	Cuyahoga Co	†	†	†	†	5	123	126	135	†	†	†	†	†	†	†	†	34.70%
CONSTELLATION SCHOOLS: COLLINWOOD VILLAGE	Ohio	Cuyahoga Co	†	11	22	19	21	19	23	14	†	†	†	†	†	†	†	†	10.85%
CONSTELLATION SCHOOLS: EASTSIDE ARTS ACADEM	Ohio	Cuyahoga Co	†	18	14	21	29	13	18	10	†	†	†	†	†	†	†	†	8.13%
CONSTELLATION SCHOOLS: MADISON COMMUNIT	Ohio	Cuyahoga Co	†	39	43	41	41	30	35	24	27	27	†	†	†	†	†	†	25.41%
CONSTELLATION SCHOOLS: OLD BROOKLYN COMM	Ohio	Cuyahoga Co	†	70	70	68	67	61	†	†	†	†	†	†	†	†	†	†	0.00%
CONSTELLATION SCHOOLS: OLD BROOKLYN COMM	Ohio	Cuyahoga Co	†	†	†	†	†	†	62	70	59	62	†	†	†	†	†	†	75.49%
CONSTELLATION SCHOOLS: PARMA COMMUNITY	Ohio	Cuyahoga Co	†	146	117	109	96	105	99	88	88	85	132	111	88	81	†	†	50.04%
CONSTELLATION SCHOOLS: PURITAS COMMUNITY	Ohio	Cuyahoga Co	†	48	41	35	33	42	†	†	†	†	†	†	†	†	†	†	0.00%
CONSTELLATION SCHOOLS: PURITAS COMMUNITY	Ohio	Cuyahoga Co	†	†	†	†	†	38	29	30	32	†	†	†	†	†	†	†	70.54%
CONSTELLATION SCHOOLS: STOCKYARD COMMUN	Ohio	Cuyahoga Co	†	41	36	39	44	41	41	31	†	†	†	†	†	†	†	†	11.36%
CONSTELLATION SCHOOLS: STOCKYARD COMMUN	Ohio	Cuyahoga Co	†	†	†	†	†	†	†	†	43	38	†	†	†	†	†	†	100.00%
CONSTELLATION SCHOOLS: WESTPARK COMMUNIT	Ohio	Cuyahoga Co	†	73	56	55	68	56	†	†	†	†	†	†	†	†	†	†	0.00%
CONSTELLATION SCHOOLS: WESTPARK COMMUNIT	Ohio	Cuyahoga Co	†	†	†	†	†	†	65	57	46	47	†	†	†	†	†	†	69.77%
CONSTELLATION SCHOOLS: WESTSIDE COMMUNIT	Ohio	Cuyahoga Co	†	40	40	47	47	40	47	43	39	39	†	†	†	†	†	†	31.68%
CUYAHOGA HTS ELEMENTARY SCHOOL	Ohio	Cuyahoga Co	35	32	44	30	54	56	62	†	†	†	†	†	†	†	†	†	0.00%
CUYAHOGA HTS HIGH SCHOOL	Ohio	Cuyahoga Co	†	†	†	†	†	†	†	†	†	†	51	70	68	68	†	†	100.00%
CUYAHOGA HTS MIDDLE SCHOOL	Ohio	Cuyahoga Co	†	†	†	†	†	†	†	68	71	54	†	†	†	†	†	†	100.00%
CUYAHOGA VALLEY CAREER CENTER	Ohio	Cuyahoga Co	†	†	†	†	†	†	†	†	†	†	0	0	0	0	†	†	N/A
DANIEL E MORGAN SCHOOL	Ohio	Cuyahoga Co	12	31	25	26	27	29	30	19	29	32	†	†	†	†	†	†	30.77%
DENISON	Ohio	Cuyahoga Co	18	30	48	35	44	36	50	28	40	35	†	†	†	†	†	†	28.30%
DENTZLER ELEMENTARY SCHOOL	Ohio	Cuyahoga Co	†	69	83	90	102	85	†	†	†	†	†	†	†	†	†	†	0.00%
DESIGN LAB @ HEALTH CAREERS	Ohio	Cuyahoga Co	†	†	†	†	†	†	†	†	†	†	112	52	42	34	†	†	100.00%
DOROTHY E LEWIS ELEMENTARY SCHOOL	Ohio	Cuyahoga Co	†	93	88	92	70	75	†	†	†	†	†	†	†	†	†	†	0.00%
DOUGLAS MACARTHUR	Ohio	Cuyahoga Co	20	44	47	38	41	28	25	29	43	†	†	†	†	†	†	†	28.53%
DOVER ELEMENTARY SCHOOL	Ohio	Cuyahoga Co	7	45	60	66	75	66	†	†	†	†	†	†	†	†	†	†	0.00%
DOVER INTERMEDIATE SCHOOL	Ohio	Cuyahoga Co	†	†	†	†	†	†	301	254	†	†	†	†	†	†	†	†	45.77%
E3AGLE ACADEMY	OHIO	Cuyahoga Co	†	†	†	†	†	†	†	†	†	†	51	87	80	†	†	†	100.00%
EARLY LEARNING PRESCHOOL	Ohio	Cuyahoga Co	107	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	0.00%
EAST ACADEMY	Ohio	Cuyahoga Co	†	31	46	42	32	26	25	28	26	29	†	†	†	†	†	†	29.12%
EAST CLARK	Ohio	Cuyahoga Co	12	28	25	29	34	28	33	14	21	27	†	†	†	†	†	†	24.70%
EAST PREPARATORY ACADEMY	Ohio	Cuyahoga Co	†	36	26	26	25	26	29	18	21	8	†	†	†	†	†	†	21.86%
EAST TECHNICAL HIGH SCHOOL	Ohio	Cuyahoga Co	†	†	†	†	†	†	†	†	†	†	98	106	80	90	†	†	100.00%
EASTWOOD ELEMENTARY SCHOOL	Ohio	Cuyahoga Co	†	†	†	†	102	111	106	1	†	†	†	†	†	†	†	†	0.31%
ELMWOOD ELEMENTARY SCHOOL	Ohio	Cuyahoga Co	†	68	53	65	91	72	76	†	†	†	†	†	†	†	†	†	0.00%
EMERSON ELEMENTARY SCHOOL	Ohio	Cuyahoga Co	37	59	62	66	79	74	54	†	†	†	†	†	†	†	†	†	0.00%
ENTREPRENEURSHIP PREPARATORY SCHOOL - WO	Ohio	Cuyahoga Co	†	†	†	†	†	†	86	84	78	57	†	†	†	†	†	†	71.80%
EUCUID CENTRAL MIDDLE SCHOOL	Ohio	Cuyahoga Co	†	†	†	†	†	†	†	356	384	4	2	†	†	†	†	†	100.00%
EUCUID HIGH SCHOOL	Ohio	Cuyahoga Co	†	†	†	†	†	†	†	†	†	360	425	456	432	432	†	†	100.00%
EUCUID PARK ELEMENTARY SCHOOL	Ohio	Cuyahoga Co	15	40	44	43	43	47	25	34	31	27	†	†	†	†	†	†	26.36%
EUCUID SCHOOLS EARLY LEARNING CENTER	Ohio	Cuyahoga Co	261	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	0.00%
FACING HISTORY HIGH SCHOOL@CHARLES MOON	Ohio	Cuyahoga Co	†	†	†	†	†	†	†	†	†	†	146	91	52	49	†	†	100.00%
FAIRFAX ELEMENTARY SCHOOL	Ohio	Cuyahoga Co	†	60	63	52	59	48	59	†	†	†	†	†	†	†	†	†	0.00%
FAIRMOUNT EARLY CHILDHOOD CENTER	Ohio	Cuyahoga Co	15	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	0.00%
FAIRVIEW HIGH SCHOOL	Ohio	Cuyahoga Co	†	†	†	†	†	†	†	†	†	†	141	132	158	145	†	†	100.00%
FALLS-LENOX PRIMARY ELEMENTARY SCHOOL	Ohio	Cuyahoga Co	†	†	236	239	250	†	†	†	†	†	†	†	†	†	†	†	0.00%
FERNWAY ELEMENTARY SCHOOL	Ohio	Cuyahoga Co	†	66	67	60	71	72	†	†	†	†	†	†	†	†	†	†	0.00%
FIRST STEP PRESCHOOL AND DAYCARE	Ohio	Cuyahoga Co	254	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	0.00%
FORD INTERMEDIATE SCHOOL	Ohio	Cuyahoga Co	†	†	†	†	†	†	444	467	†	†	†	†	†	†	†	†	51.26%
FOREST ELEMENTARY SCHOOL	Ohio	Cuyahoga Co	41	81	94	84	†	†	†	†	†	†	†	†	†	†	†	†	0.00%
FRANKLIN D. ROOSEVELT	Ohio	Cuyahoga Co	24	42	50	50	57	42	33	38	44	40	2	†	†	†	†	†	29.38%

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This is a Public School based table with the following filters applied: State(s) [All Years]: All 50 + DC; County Name [Public School] [All Years: 2016-17]: CUYAHOGA COUNTY, SUMMIT COUNTY

School Name	State Name [Public School]	County Name [Public School]	Prekinderga rten Students [Public School]	Kindergarte n Students [Public School]	Grade 1 Students [Public School]	Grade 2 Students [Public School]	Grade 3 Students [Public School]	Grade 4 Students [Public School]	Grade 5 Students [Public School]	Grade 6 Students [Public School]	Grade 7 Students [Public School]	Grade 8 Students [Public School]	Grade 9 Students [Public School]	Grade 10 Students [Public School]	Grade 11 Students [Public School]	Grade 12 Students [Public School]	Grade 13 Students [Public School]	Ungraded Students [Public School]	Grade 6-12 % Enrollment
Latest available year	2016-17	2016-17	2016-17	2016-17	2016-17	2016-17	2016-17	2016-17	2016-17	2016-17	2016-17	2016-17	2016-17	2016-17	2016-17	2016-17	2016-17	2016-17	
FREDERICK DOUGLASS RECLAMATION ACADEMY	Ohio	Cuyahoga Co	†	†	†	†	†	†	†	†	†	†	21	22	24	30	†	†	100.00%
FULLERTON SCHOOL	Ohio	Cuyahoga Co	†	24	18	16	20	17	22	18	21	25	†	†	†	†	†	†	35.36%
GARFIELD ELEMENTARY SCHOOL	Ohio	Cuyahoga Co	37	49	60	61	80	74	54	63	67	56	†	1	†	†	†	†	31.06%
GARFIELD HEIGHTS HIGH SCHOOL	Ohio	Cuyahoga Co	†	†	†	†	†	†	†	†	†	†	366	324	314	285	†	†	100.00%
GARFIELD HEIGHTS MIDDLE SCHOOL	Ohio	Cuyahoga Co	†	†	†	†	†	†	241	236	303	†	†	†	†	†	†	†	100.00%
GARFIELD MIDDLE SCHOOL	Ohio	Cuyahoga Co	†	†	†	†	†	†	†	197	187	178	†	†	†	†	†	†	100.00%
GARRETT MORGAN SCHL OF SCIENCE SCHOOL	Ohio	Cuyahoga Co	†	†	†	†	†	†	†	†	†	†	74	69	38	58	†	†	100.00%
GATES MILLS ELEMENTARY SCHOOL	Ohio	Cuyahoga Co	†	23	25	16	25	18	19	†	†	†	†	†	†	†	†	†	0.00%
GEARITY PROFESSIONAL DEVELOPMENT SCHOOL	Ohio	Cuyahoga Co	91	40	50	34	37	39	57	†	†	†	†	†	†	†	†	†	0.00%
GEORGE V. VOINOVICH RECLAMATION ACADEMY	Ohio	Cuyahoga Co	†	†	†	†	†	†	†	†	†	†	16	22	22	22	†	†	100.00%
GEORGE WASHINGTON CARVER	Ohio	Cuyahoga Co	29	34	46	38	56	35	40	27	28	51	†	†	†	†	†	†	27.60%
GILLES-SWEET ELEMENTARY SCHOOL	Ohio	Cuyahoga Co	†	†	121	142	133	130	138	†	†	†	†	†	†	†	†	†	0.00%
GINN ACADEMY	Ohio	Cuyahoga Co	†	†	†	†	†	†	†	†	†	†	125	116	86	100	†	†	100.00%
GLENDAL PRIMARY SCHOOL	Ohio	Cuyahoga Co	71	99	94	118	111	†	†	†	†	†	†	†	†	†	†	†	0.00%
GLENVILLE HIGH SCHOOL	Ohio	Cuyahoga Co	†	†	†	†	†	†	†	†	1	†	98	104	88	135	†	†	100.00%
GLOBAL AMBASSADORS LANGUAGE ACADEMY	OHIO	Cuyahoga Co	†	43	19	†	†	†	†	†	†	†	†	†	†	†	†	†	0.00%
GLOBAL VILLAGE ACADEMY	Ohio	Cuyahoga Co	†	22	19	21	16	21	25	19	11	†	†	†	†	†	†	†	19.48%
GOLDWOOD PRIMARY ELEMENTARY SCHOOL	Ohio	Cuyahoga Co	64	134	166	185	†	†	†	†	†	†	†	†	†	†	†	†	0.00%
GRACE L ROXBURY ELEMENTARY SCHOOL	Ohio	Cuyahoga Co	†	71	89	115	106	124	†	†	†	†	†	†	†	†	†	†	0.00%
GRANT ELEMENTARY SCHOOL	Ohio	Cuyahoga Co	10	61	38	55	55	66	63	†	†	†	†	†	†	†	†	†	0.00%
GREEN INSPIRATION ACADEMY	Ohio	Cuyahoga Co	†	21	24	26	26	23	24	18	26	26	†	†	†	†	†	†	32.71%
GREEN VALLEY ELEMENTARY SCHOOL	Ohio	Cuyahoga Co	†	54	71	67	73	80	†	†	†	†	†	†	†	†	†	†	0.00%
GREENBRIAR MIDDLE SCHOOL	Ohio	Cuyahoga Co	†	†	†	†	†	†	339	297	285	†	†	†	†	†	†	†	63.19%
GREENVIEW UPPER ELEMENTARY SCHOOL	Ohio	Cuyahoga Co	†	†	†	†	5	236	258	231	†	†	†	†	†	†	†	†	31.64%
GRINDSTONE ELEMENTARY SCHOOL	Ohio	Cuyahoga Co	60	140	128	150	165	164	†	†	†	†	†	†	†	†	†	†	0.00%
H BARBARA BOOKER ELEMENTARY SCHOOL	Ohio	Cuyahoga Co	45	39	44	57	44	21	25	29	31	25	†	†	†	†	†	†	23.61%
HANNAH GIBBONS-NOTTINGHAM ELEMENTARY SCHOOL	Ohio	Cuyahoga Co	13	21	27	25	26	27	35	25	19	32	1	†	†	†	†	†	30.68%
HARDING MIDDLE SCHOOL	Ohio	Cuyahoga Co	†	†	†	†	†	†	213	149	180	†	†	†	†	†	†	†	100.00%
HARRISON ELEMENTARY SCHOOL	Ohio	Cuyahoga Co	38	61	55	62	76	51	54	†	†	†	†	†	†	†	†	†	0.00%
HARVARD AVENUE PERFORMANCE ACADEMY	Ohio	Cuyahoga Co	†	38	42	43	41	58	35	28	39	41	†	†	†	†	†	†	29.59%
HARVEY RICE ELEMENTARY SCHOOL	Ohio	Cuyahoga Co	16	53	54	52	27	59	52	29	60	60	1	†	†	†	†	†	32.40%
HAYES ELEMENTARY SCHOOL	Ohio	Cuyahoga Co	40	56	54	66	60	57	60	†	†	†	†	†	†	†	†	†	0.00%
HBCU PREPARATORY SCHOOL 1	Ohio	Cuyahoga Co	†	†	†	†	27	27	27	19	15	9	†	†	†	†	†	†	34.68%
HBCU PREPARATORY SCHOOL 2	Ohio	Cuyahoga Co	†	27	36	40	†	†	†	†	†	†	†	†	†	†	†	†	0.00%
HEALTH CAREERS CENTER HIGH SCHOOL	Ohio	Cuyahoga Co	†	†	†	†	†	†	†	†	†	†	74	105	95	117	†	†	100.00%
HERITAGE MIDDLE SCHOOL	Ohio	Cuyahoga Co	†	†	†	†	†	†	†	†	146	136	†	†	†	†	†	†	100.00%
HESKETT MIDDLE SCHOOL	Ohio	Cuyahoga Co	†	†	†	†	†	†	†	287	254	†	†	†	†	†	†	†	100.00%
HIGHLAND DRIVE ELEMENTARY SCHOOL	Ohio	Cuyahoga Co	†	70	76	80	98	†	†	†	†	†	†	†	†	†	†	†	0.00%
HILLIARD ELEMENTARY SCHOOL	Ohio	Cuyahoga Co	88	36	48	48	48	44	†	†	†	†	†	†	†	†	†	†	0.00%
HILLSIDE MIDDLE SCHOOL	Ohio	Cuyahoga Co	†	†	†	†	†	†	206	218	208	†	†	†	†	†	†	†	67.41%
HILLTOP ELEMENTARY SCHOOL	Ohio	Cuyahoga Co	†	†	†	†	89	99	80	†	†	†	†	†	†	†	†	†	0.00%
HILTON ELEMENTARY SCHOOL	Ohio	Cuyahoga Co	60	69	82	90	98	†	†	†	†	†	†	†	†	†	†	†	0.00%
HOLLY LANE ELEMENTARY SCHOOL	Ohio	Cuyahoga Co	†	44	36	49	50	40	†	†	†	†	†	†	†	†	†	†	0.00%
HOPE ACADEMY NORTHCOAST	Ohio	Cuyahoga Co	†	27	29	29	32	40	42	26	35	26	†	†	†	†	†	†	30.42%
HOPE ACADEMY NORTHWEST CAMPUS	Ohio	Cuyahoga Co	†	21	21	43	41	27	33	31	20	19	†	†	†	†	†	†	27.34%
HORACE MANN ELEMENTARY SCHOOL	Ohio	Cuyahoga Co	32	38	48	53	50	51	46	†	†	†	†	†	†	†	†	†	0.00%
HORIZON SCIENCE ACAD CLEVELAND	Ohio	Cuyahoga Co	†	†	†	†	†	†	†	†	†	†	119	120	123	105	†	†	100.00%
HORIZON SCIENCE ACADEMY DENISON ELEMENTA	Ohio	Cuyahoga Co	†	25	18	25	26	22	26	†	†	†	†	†	†	†	†	†	0.00%
HORIZON SCIENCE ACADEMY-CLEVELAND MIDDLE	Ohio	Cuyahoga Co	†	47	31	35	29	35	41	52	56	55	†	†	†	†	†	†	42.78%
HORIZON SCIENCE ACADEMY-DENISON MIDDLE SC	Ohio	Cuyahoga Co	†	22	36	38	30	39	27	41	49	39	†	†	†	†	†	†	40.19%
INDEPENDENCE HIGH SCHOOL	Ohio	Cuyahoga Co	†	†	†	†	†	†	†	†	†	†	86	90	95	94	†	†	100.00%
INDEPENDENCE MIDDLE SCHOOL	Ohio	Cuyahoga Co	†	†	†	†	†	†	76	80	78	67	2	†	†	†	†	†	74.92%
INDEPENDENCE PRIMARY SCHOOL	Ohio	Cuyahoga Co	33	63	77	59	63	88	†	†	†	†	†	†	†	†	†	†	0.00%
INTERGENERATIONAL SCHOOL THE	Ohio	Cuyahoga Co	†	41	35	41	29	22	26	19	19	11	†	†	†	†	†	†	20.16%
INVICTUS HIGH SCHOOL	Ohio	Cuyahoga Co	†	†	†	†	†	†	†	†	†	†	191	104	32	46	†	†	100.00%
IOWA-MAPLE ELEMENTARY SCHOOL	Ohio	Cuyahoga Co	41	26	23	36	27	27	29	22	22	24	1	†	†	†	†	†	24.82%
J.F. KENNEDY SCHOOL	Ohio	Cuyahoga Co	†	†	†	254	302	2	†	†	†	†	†	†	†	†	†	†	0.00%
JAMES FORD RHODES HIGH SCHOOL	Ohio	Cuyahoga Co	†	†	†	†	†	1	†	1	†	†	381	324	286	263	†	†	99.92%
JANE ADDAMS BUSINESS CAREERS HIGH SCHOOL	OHIO	Cuyahoga Co	†	†	†	†	†	†	†	†	†	†	109	76	73	67	†	†	100.00%
JOHN ADAMS HIGH SCHOOL	Ohio	Cuyahoga Co	†	†	†	†	†	†	†	†	1	†	194	168	127	248	†	†	100.00%
JOHN DEWEY ELEMENTARY SCHOOL	Ohio	Cuyahoga Co	63	139	119	107	†	†	†	†	†	†	†	†	†	†	†	†	0.00%
JOHN F KENNEDY HIGH SCHOOL	Ohio	Cuyahoga Co	†	†	†	†	1	†	†	†	1	1	9	18	23	129	†	†	99.45%
JOHN MARSHALL HIGH SCHOOL	Ohio	Cuyahoga Co	†	†	†	†	†	†	†	1	2	†	5	22	42	328	†	†	100.00%
JOHN MARSHALL SCHOOL OF BUSINESS AND CIVIC	OHIO	Cuyahoga Co	†	†	†	†	†	†	†	†	†	†	116	120	83	†	†	†	100.00%
JOHN MARSHALL SCHOOL OF ENGINEERING	OHIO	Cuyahoga Co	†	†	†	†	†	†	†	†	†	†	107	102	65	†	†	†	100.00%
JOHN MARSHALL SCHOOL OF INFORMATION TECH	OHIO	Cuyahoga Co	†	†	†	†	†	†	†	†	†	†	122	98	86	†	†	†	100.00%
JOHN MUIR ELEMENTARY SCHOOL	Ohio	Cuyahoga Co	†	71	92	97	79	110	†	†	†	†	†	†	†	†	†	†	0.00%

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This is a Public School based table with the following filters applied: State(s) [All Years]: All 50 + DC; County Name [Public School] [All Years: 2016-17]: CUYAHOGA COUNTY, SUMMIT COUNTY

School Name	State Name		Prekinderga																Ungraded Students	Grade 6-12 % Enrollment
	[Public School]	County Name	Students	n Students	Students	Students	Students	Students	Students	Students	Students	Students	Students	Students	Students	Students	Students	Students		
Latest available year	[Public School]	[Public School]	[Public School]	[Public School]	[Public School]	[Public School]	[Public School]	[Public School]	[Public School]	[Public School]	[Public School]	[Public School]	[Public School]	[Public School]	[Public School]	[Public School]	[Public School]	[Public School]		
2016-17	2016-17	2016-17	2016-17	2016-17	2016-17	2016-17	2016-17	2016-17	2016-17	2016-17	2016-17	2016-17	2016-17	2016-17	2016-17	2016-17	2016-17	2016-17		
JOSEPH M GALLAGHER SCHOOL	Ohio	Cuyahoga Co	50	69	84	64	72	73	86	76	75	97	†	†	†	†	†	†	†	33.24%
KENNETH W CLEMENT	Ohio	Cuyahoga Co	11	16	19	16	21	17	25	22	25	18	†	†	†	†	†	†	†	34.21%
KENSINGTON INTERMEDIATE ELEMENTARY SCHOOL	Ohio	Cuyahoga Co	†	†	†	†	202	201	218	†	†	†	†	†	†	†	†	†	†	0.00%
KINSNER ELEMENTARY SCHOOL	Ohio	Cuyahoga Co	†	76	91	71	82	80	111	†	†	†	†	†	†	†	†	†	†	0.00%
LAKE ERIE COLLEGE PREPARATORY SCHOOL	Ohio	Cuyahoga Co	†	30	46	35	45	25	34	32	30	35	†	†	†	†	†	†	†	31.09%
LAKE ERIE INTERNATIONAL HIGH SCHOOL	Ohio	Cuyahoga Co	†	†	†	†	†	†	†	†	†	†	92	72	65	19	†	†	†	100.00%
LAKESHORE INTERGENERATIONAL SCHOOL	OHIO	Cuyahoga Co	†	42	43	44	35	14	†	†	†	†	†	†	†	†	†	†	†	0.00%
LAKEWOOD CITY ACADEMY	Ohio	Cuyahoga Co	†	†	†	†	†	†	†	†	13	15	30	22	20	26	†	†	†	100.00%
LAKEWOOD HIGH SCHOOL	Ohio	Cuyahoga Co	†	†	†	†	†	†	†	†	†	†	416	368	410	447	†	†	†	100.00%
LANDER ELEMENTARY	Ohio	Cuyahoga Co	†	74	72	86	72	89	74	†	†	†	†	†	†	†	†	†	†	0.00%
LEE BURNESON MIDDLE SCHOOL	Ohio	Cuyahoga Co	†	†	†	†	†	†	†	†	308	305	†	†	†	†	†	†	†	100.00%
LEWIS F MAYER MIDDLE SCHOOL	Ohio	Cuyahoga Co	†	†	†	†	†	†	†	125	150	129	†	†	†	†	†	†	†	100.00%
LIFE SKILLS HIGH SCHOOL OF CLEVELAND	Ohio	Cuyahoga Co	†	†	†	†	†	†	†	†	†	†	47	18	14	24	†	†	†	100.00%
LIFE SKILLS OF NORTHEAST OHIO	Ohio	Cuyahoga Co	†	†	†	†	†	†	†	†	†	†	70	13	13	6	†	†	†	100.00%
LINCOLN ELEMENTARY SCHOOL	Ohio	Cuyahoga Co	6	59	54	42	43	73	41	†	†	†	†	†	†	†	†	†	†	0.00%
LINCOLN PARK ACADEMY	Ohio	Cuyahoga Co	†	28	24	27	49	23	27	23	22	17	†	†	†	†	†	†	†	25.83%
LINCOLN PREPARATORY ACADEMY	Ohio	Cuyahoga Co	†	24	23	27	28	25	24	26	27	15	†	†	†	†	†	†	†	31.05%
LINCOLN WEST SCHOOL OF GLOBAL STUDIES	OHIO	Cuyahoga Co	†	†	†	†	†	†	†	†	†	†	103	†	†	†	†	†	†	100.00%
LINCOLN WEST SCHOOL OF SCIENCE & HEALTH	OHIO	Cuyahoga Co	†	†	†	†	†	†	†	†	†	†	83	44	†	†	†	†	†	100.00%
LINCOLN-WEST HIGH SCHOOL	Ohio	Cuyahoga Co	†	†	†	†	†	†	†	†	1	†	41	122	177	185	†	†	†	100.00%
LOMOND ELEMENTARY SCHOOL	Ohio	Cuyahoga Co	†	60	91	84	87	86	†	1	†	†	†	†	†	†	†	†	†	0.24%
LOUIS AGASSIZ SCHOOL	Ohio	Cuyahoga Co	25	29	26	40	28	38	30	25	31	30	†	†	†	†	†	†	†	28.48%
LOUISA MAY ALCOTT ELEMENTARY SCHOOL	Ohio	Cuyahoga Co	†	50	48	45	42	34	31	†	†	†	†	†	†	†	†	†	†	0.00%
LUIS MUNOZ MARIN SCHOOL	Ohio	Cuyahoga Co	27	38	46	47	70	71	65	44	66	66	†	†	†	†	†	†	†	32.59%
LUTHER E BALL (CHUCF)	Ohio	Cuyahoga Co	†	†	†	†	†	†	†	†	†	†	1	47	27	12	19	†	†	100.00%
MAPLE HEIGHTS HIGH SCHOOL	Ohio	Cuyahoga Co	†	†	†	†	†	†	†	†	†	†	283	236	246	270	†	†	†	100.00%
MAPLE INTERMEDIATE ELEMENTARY SCHOOL	Ohio	Cuyahoga Co	†	†	†	†	86	109	96	90	†	†	†	†	†	†	†	†	†	23.62%
MAPLE LEAF ELEMENTARY SCHOOL	Ohio	Cuyahoga Co	†	67	74	84	88	82	101	†	†	†	†	†	†	†	†	†	†	0.00%
MARION C SELTZER ELEMENTARY SCHOOL	Ohio	Cuyahoga Co	38	40	37	42	49	34	27	46	31	44	†	†	†	†	†	†	†	31.19%
MARION-STERLING ELEMENTARY SCHOOL	Ohio	Cuyahoga Co	41	51	47	47	23	28	20	26	27	25	1	†	†	†	†	†	†	23.51%
MARY B MARTIN SCHOOL	Ohio	Cuyahoga Co	51	37	41	35	39	34	40	19	28	20	1	†	†	†	†	†	†	19.71%
MARY M BETHUNE	Ohio	Cuyahoga Co	14	29	32	40	31	25	31	35	33	26	†	†	†	†	†	†	†	31.76%
MAX S HAYES HIGH SCHOOL	Ohio	Cuyahoga Co	†	†	†	†	†	†	†	†	†	†	177	167	147	165	†	†	†	100.00%
MAYFAIR ELEMENTARY SCHOOL	Ohio	Cuyahoga Co	†	19	21	30	28	32	27	29	†	†	†	†	†	†	†	†	†	15.59%
MAYFIELD CENTER ELEMENTARY SCHOOL	Ohio	Cuyahoga Co	†	80	71	72	71	71	76	†	†	†	†	†	†	†	†	†	†	0.00%
MAYFIELD HIGH SCHOOL	Ohio	Cuyahoga Co	†	†	†	†	†	†	†	†	†	1	337	303	549	587	†	†	†	100.00%
MAYFIELD MIDDLE SCHOOL	Ohio	Cuyahoga Co	†	†	†	†	†	†	†	290	316	300	†	†	†	†	†	†	†	100.00%
MAYFIELD PRESCHOOL	Ohio	Cuyahoga Co	71	†	3	†	5	3	8	†	†	†	†	†	†	†	†	†	†	0.00%
MC^2 STEM HIGH SCHOOL	Ohio	Cuyahoga Co	†	†	†	†	†	†	†	†	†	†	118	107	97	102	†	†	†	100.00%
MCINLEY SCHOOL	Ohio	Cuyahoga Co	13	24	17	18	17	19	21	20	17	26	1	†	†	†	†	†	†	33.16%
MEMORIAL JUNIOR HIGH SCHOOL	Ohio	Cuyahoga Co	†	†	†	†	†	†	†	†	246	258	†	†	†	†	†	†	†	100.00%
MEMORIAL SCHOOL	Ohio	Cuyahoga Co	42	50	40	34	51	42	34	38	43	29	†	†	†	†	†	†	†	27.30%
MENLO PARK ACADEMY	Ohio	Cuyahoga Co	†	43	51	48	55	52	47	44	37	29	†	†	†	†	†	†	†	27.09%
MERCER ELEMENTARY SCHOOL	Ohio	Cuyahoga Co	15	64	66	60	84	54	†	†	†	†	†	†	†	†	†	†	†	0.00%
MICHAEL R. WHITE	Ohio	Cuyahoga Co	†	14	21	20	36	26	27	20	28	36	†	†	†	†	†	†	†	36.84%
MIDDLEBURG HEIGHTS JUNIOR HIGH	Ohio	Cuyahoga Co	†	†	†	†	†	†	†	†	482	446	461	†	†	†	†	†	†	100.00%
MILES PARK SCHOOL	Ohio	Cuyahoga Co	18	52	50	56	48	55	47	55	63	55	†	†	†	†	†	†	†	34.67%
MILES SCHOOL	Ohio	Cuyahoga Co	46	58	49	57	39	44	31	24	25	29	†	†	†	†	†	†	†	19.40%
MILKOVICH MIDDLE SCHOOL	Ohio	Cuyahoga Co	†	†	†	†	†	†	†	256	271	261	†	†	†	†	†	†	†	100.00%
MILLRIDGE ELEMENTARY SCHOOL	Ohio	Cuyahoga Co	†	113	76	87	97	101	108	†	†	†	†	†	†	†	†	†	†	0.00%
MONTICELLO MIDDLE SCHOOL	Ohio	Cuyahoga Co	†	†	†	†	†	†	†	178	180	208	†	†	†	†	†	†	†	100.00%
MORELAND HILLS ELEMENTARY SCHOOL	Ohio	Cuyahoga Co	†	106	150	141	128	152	131	†	†	†	†	†	†	†	†	†	†	0.00%
MOUND ELEMENTARY SCHOOL	Ohio	Cuyahoga Co	15	49	47	47	52	50	45	42	44	43	†	†	†	†	†	†	†	29.72%
MURASKI ELEMENTARY SCHOOL	Ohio	Cuyahoga Co	†	76	75	73	77	75	90	†	†	†	†	†	†	†	†	†	†	0.00%
NATHAN HALE SCHOOL	Ohio	Cuyahoga Co	11	58	60	63	59	60	48	55	66	59	†	†	†	†	†	†	†	33.40%
NEAR WEST INTERGENERATIONAL SCHOOL	Ohio	Cuyahoga Co	†	41	36	39	36	28	19	9	6	2	†	†	†	†	†	†	†	7.87%
NEW DAY ACADEMY BOARDING & DAY SCHOOL	Ohio	Cuyahoga Co	†	3	11	7	5	10	5	7	9	22	32	25	13	21	†	†	†	75.88%
NEW TECHNOLOGY HS@EAST TECH	Ohio	Cuyahoga Co	†	†	†	†	†	†	†	†	†	†	79	51	20	20	†	†	†	100.00%
NEW TECHNOLOGY WEST	Ohio	Cuyahoga Co	†	†	†	†	†	†	†	†	†	†	119	78	67	52	†	†	†	100.00%
NEWTON D BAKER SCHOOL	Ohio	Cuyahoga Co	35	45	44	49	50	44	36	45	35	41	†	†	†	†	†	†	†	28.54%
NEXUS ACADEMY OF CLEVELAND	Ohio	Cuyahoga Co	†	†	†	†	†	†	†	†	†	†	51	52	51	33	†	†	†	100.00%
NOBLE ACADEMY-CLEVELAND	Ohio	Cuyahoga Co	†	39	41	49	50	51	47	52	49	51	†	†	†	†	†	†	†	35.43%
NOBLE ELEMENTARY SCHOOL	Ohio	Cuyahoga Co	15	60	58	52	65	57	71	†	†	†	†	†	†	†	†	†	†	0.00%
NORMANDY ELEMENTARY SCHOOL	Ohio	Cuyahoga Co	42	168	156	167	†	†	†	†	†	†	†	†	†	†	†	†	†	0.00%
NORMANDY HIGH SCHOOL	Ohio	Cuyahoga Co	†	†	†	†	†	†	†	†	†	†	229	299	279	298	283	†	†	100.00%
NORTH OLMSTED HIGH SCHOOL	Ohio	Cuyahoga Co	†	†	†	†	†	†	†	†	†	†	†	263	346	319	359	†	†	100.00%
NORTH OLMSTED MIDDLE SCHOOL	Ohio	Cuyahoga Co	†	†	†	†	†	†	†	†	304	275	†	†	†	†	†	†	†	100.00%

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This is a Public School based table with the following filters applied: State(s) [All Years]: All 50 + DC; County Name [Public School] [All Years: 2016-17]: CUYAHOGA COUNTY, SUMMIT COUNTY

School Name	State Name	Prekinderga																	Grade 6-12 % Enrollment	
	[Public School]	County Name	rtens	Kindergarte	Grade 1	Grade 2	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Grade 9	Grade 10	Grade 11	Grade 12	Grade 13	Ungraded		
	Latest available year	[Public School] 2016-17	[Public School] 2016-17	[Public School] 2016-17	[Public School] 2016-17	[Public School] 2016-17	[Public School] 2016-17	[Public School] 2016-17	[Public School] 2016-17	[Public School] 2016-17	[Public School] 2016-17	[Public School] 2016-17	[Public School] 2016-17	[Public School] 2016-17	[Public School] 2016-17	[Public School] 2016-17	[Public School] 2016-17	[Public School] 2016-17		
NORTH ROYALTON HIGH SCHOOL	Ohio	Cuyahoga Co												386	376	389	401			100.00%
NORTH ROYALTON MIDDLE SCHOOL	Ohio	Cuyahoga Co								310	317	336	344							76.28%
NORTHEAST OHIO COLLEGE PREPARATORY SCHOOL	Ohio	Cuyahoga Co		24	23	30	33	31	35	33	35	38	99	83	62	45				69.18%
OHIO COLLEGE PREPARATORY SCHOOL	Ohio	Cuyahoga Co		36	35	33	40	40	38	33	37	34								31.90%
OHIO CONNECTIONS ACADEMY INC	Ohio	Cuyahoga Co		154	147	148	151	147	204	227	305	359	421	483	416	330				72.77%
OLD BROOK HIGH SCHOOL	Ohio	Cuyahoga Co												73	26	27	19			100.00%
OLIVER H PERRY ELEMENTARY SCHOOL	Ohio	Cuyahoga Co	18	38	30	17	23	19	27	28	30	23	1							32.28%
OLMSTED FALLS EARLY CHILDHOOD CENTER	Ohio	Cuyahoga Co	55	196																0.00%
OLMSTED FALLS HIGH SCHOOL	Ohio	Cuyahoga Co												296	348	305	305			100.00%
OLMSTED FALLS INTERMEDIATE BUILDING	Ohio	Cuyahoga Co							279	266										0.00%
OLMSTED FALLS MIDDLE SCHOOL	Ohio	Cuyahoga Co									276	312	297							100.00%
ONAWAY ELEMENTARY SCHOOL	Ohio	Cuyahoga Co	58	66	61	69	79	59												0.00%
ORANGE HIGH SCHOOL	Ohio	Cuyahoga Co												171	166	184	191			100.00%
ORANGE INCLUSIVE PRESCHOOL	Ohio	Cuyahoga Co	38																	0.00%
ORCHARD MIDDLE SCHOOL	Ohio	Cuyahoga Co								319	372									53.84%
ORCHARD SCHOOL	Ohio	Cuyahoga Co	13	52	50	58	57	46	53	58	51	54	1							33.27%
OXFORD ELEMENTARY SCHOOL	Ohio	Cuyahoga Co	4	40	37	37	40	49	52											0.00%
PACT @ JFK	OHIO	Cuyahoga Co												70	59	103				100.00%
PARKSIDE ELEMENTARY SCHOOL	Ohio	Cuyahoga Co		98	92	87	96	113												0.00%
PARKVIEW EARLY EDUCATION CENTER	Ohio	Cuyahoga Co	32	132																0.00%
PARMA HIGH SCHOOL	Ohio	Cuyahoga Co											300	308	361	360	368			100.00%
PARMA PARK ELEMENTARY SCHOOL	Ohio	Cuyahoga Co		52	68	68	78	54												0.00%
PATRICK HENRY SCHOOL	Ohio	Cuyahoga Co	10	32	42	37	34	37	39	25	31	45	1							30.63%
PAUL L DUNBAR ELEMENTARY SCHOOL	Ohio	Cuyahoga Co	33	58	47	35	44	37	38	26	20	33	1							21.51%
PINE SCHOOL	Ohio	Cuyahoga Co					101	90	94	95										25.00%
PINNACLE ACADEMY	Ohio	Cuyahoga Co		93	89	79	88	83	82	78	80	80								31.65%
PLEASANT VALLEY ELEMENTARY SCHOOL	Ohio	Cuyahoga Co		169	165	184	162	164												0.00%
POLARIS CAREER CENTER	Ohio	Cuyahoga Co								0	0	0	0	0	0	0	0			N/A
PROMISE ACADEMY	Ohio	Cuyahoga Co												55	85	52	53			100.00%
QUEST COMMUNITY SCHOOL	Ohio	Cuyahoga Co												8	11	17	35			100.00%
REGENT HIGH SCHOOL	Ohio	Cuyahoga Co												67	43	39	20			100.00%
RENWOOD ELEMENTARY SCHOOL	Ohio	Cuyahoga Co		55	68	75	55	65												0.00%
RICHMOND HEIGHTS ELEMENTARY SCHOOL	Ohio	Cuyahoga Co	15	56	55	55	58	62	49	60										14.63%
RICHMOND HEIGHTS SECONDARY SCHOOL	Ohio	Cuyahoga Co									61	54	54	69	69	63				100.00%
RIDGE-BROOK ELEMENTARY SCHOOL	Ohio	Cuyahoga Co		74	73	70	78	78												0.00%
RIVERSIDE SCHOOL	Ohio	Cuyahoga Co	17	46	45	44	61	59	58	57	51	60	2							34.00%
ROBERT H JAMISON SCHOOL	Ohio	Cuyahoga Co	13	37	48	42	50	52	31	31	32	44								28.16%
ROBINSON G JONES ELEMENTARY SCHOOL	Ohio	Cuyahoga Co	43	52	47	53	56	55	52	53	45	31	2							26.79%
ROCKY RIVER HIGH SCHOOL	Ohio	Cuyahoga Co											205	220	207	217				100.00%
ROCKY RIVER MIDDLE SCHOOL	Ohio	Cuyahoga Co								237	223	213								100.00%
ROOSEVELT ELEMENTARY SCHOOL	Ohio	Cuyahoga Co	32	42	36	37	53	34	38											0.00%
ROWLAND ELEMENTARY SCHOOL	Ohio	Cuyahoga Co	57	94	97	93	102													0.00%
ROXBORO ELEMENTARY SCHOOL	Ohio	Cuyahoga Co		48	49	62	52	71	62											0.00%
ROXBORO MIDDLE SCHOOL	Ohio	Cuyahoga Co							226	217	207									100.00%
ROYAL VIEW ELEMENTARY SCHOOL	Ohio	Cuyahoga Co	85	67	87	73	88	83												0.00%
SCRANTON SCHOOL	Ohio	Cuyahoga Co	42	51	39	46	50	51	41	38	53	54								31.18%
SHAKER HTS HIGH SCHOOL	Ohio	Cuyahoga Co										1	439	426	441	417				100.00%
SHAKER HTS MIDDLE SCHOOL	Ohio	Cuyahoga Co									414	388								100.00%
SHAW HIGH SCHOOL	Ohio	Cuyahoga Co											226	212	202	186				100.00%
SHILOH MIDDLE SCHOOL	Ohio	Cuyahoga Co							237	230	278									68.19%
SHOREVIEW ELEMENTARY SCHOOL	Ohio	Cuyahoga Co		79	82	81	106	98	98											0.00%
SOLON HIGH SCHOOL	Ohio	Cuyahoga Co												412	400	427	407			100.00%
SOLON MIDDLE SCHOOL	Ohio	Cuyahoga Co									376	392								100.00%
SPRUCE ELEMENTARY SCHOOL	Ohio	Cuyahoga Co	41	55	64	51														0.00%
STEAM ACADEMY OF WARRENSVILLE HEIGHTS	Ohio	Cuyahoga Co		30	28	34	32	21	21	20	15	9								20.95%
STEPSTONE ACADEMY	Ohio	Cuyahoga Co		82	59	51	59	31	20											0.00%
STONEBROOK MONTESSORI	OHIO	Cuyahoga Co	55	35	31	17	15													0.00%
STRONGSVILLE HIGH SCHOOL	Ohio	Cuyahoga Co											477	494	513	529				100.00%
STRONGSVILLE MIDDLE SCHOOL	Ohio	Cuyahoga Co									400	491	427							100.00%
SUCCESSTECH ACADEMY SCHOOL	Ohio	Cuyahoga Co												1	6	41				100.00%
SUMMIT ACADEMY COMMUNITY SCHOOL-PARMA	Ohio	Cuyahoga Co		4	7	15	16	16	17	16	18	18	23	15	20	14				62.31%
SUNBEAM	Ohio	Cuyahoga Co	34	48	42	45	46	37	26	26	29	34								24.25%
SUNVIEW ELEMENTARY SCHOOL	Ohio	Cuyahoga Co		86	77	95	89													0.00%
SUPERIOR ELEMENTARY SCHOOL	Ohio	Cuyahoga Co	82	41	30	30	35	33	27	24										7.95%
SURRARRER ELEMENTARY SCHOOL	Ohio	Cuyahoga Co		51	57	54	67	60	56											0.00%
T2 HONORS ACADEMY	OHIO	Cuyahoga Co								13	13	17	28	22	16					100.00%
THE CAPELLA INSTITUTE	Ohio	Cuyahoga Co											6	12	19	52				100.00%

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This is a Public School based table with the following filters applied: State(s) [All Years]: All 50 + DC; County Name [Public School] [All Years: 2016-17]: CUYAHOGA COUNTY, SUMMIT COUNTY

School Name	State Name		Prekinderga																Ungraded Students	Grade 6-12 % Enrollment
	[Public School]	County Name	Students	n Students	Students	Students	Students	Students	Students	Students	Students	Students	Students	Students	Students	Students	Students	Students		
Latest available year	[Public School]	[Public School]	[Public School]	[Public School]	[Public School]	[Public School]	[Public School]	[Public School]	[Public School]	[Public School]	[Public School]	[Public School]	[Public School]	[Public School]	[Public School]	[Public School]	[Public School]	[Public School]		
2016-17	2016-17	2016-17	2016-17	2016-17	2016-17	2016-17	2016-17	2016-17	2016-17	2016-17	2016-17	2016-17	2016-17	2016-17	2016-17	2016-17	2016-17	2016-17		
THE HALEY SCHOOL	Ohio	Cuyahoga Co	†	33	29	44	37	37	20	15	15	†	†	†	†	†	†	†	†	13.04%
THE SCHOOL OF ONE	Ohio	Cuyahoga Co	†	†	†	†	†	†	†	†	†	†	1	19	42	55	130	†	†	100.00%
THOMAS JEFFERSON SCHOOL	Ohio	Cuyahoga Co	12	55	54	56	41	56	43	49	52	42	72	68	52	66	†	†	†	55.85%
THOREAU PARK ELEMENTARY SCHOOL	Ohio	Cuyahoga Co	†	74	86	86	100	86	†	†	†	†	†	†	†	†	†	†	†	0.00%
TREMONT MONTESSORI SCHOOL	Ohio	Cuyahoga Co	75	92	57	63	51	55	42	44	45	35	†	†	†	†	†	†	†	22.18%
UNIVERSITY OF CLEVELAND PREPARATORY SCHOO	Ohio	Cuyahoga Co	†	59	63	60	49	46	33	27	30	34	†	†	†	†	†	†	†	22.69%
VALLEY FORGE HIGH SCHOOL	Ohio	Cuyahoga Co	†	†	†	†	†	†	†	†	†	286	315	312	315	337	†	†	†	100.00%
VALLEY VIEW ELEMENTARY SCHOOL	Ohio	Cuyahoga Co	14	16	23	15	24	21	17	20	18	22	†	†	†	†	†	†	†	31.58%
VALLEY VISTA ELEMENTARY SCHOOL	Ohio	Cuyahoga Co	†	74	82	76	107	89	†	†	†	†	†	†	†	†	†	†	†	0.00%
VILLAGE PREPARATORY SCHOOL	Ohio	Cuyahoga Co	†	94	75	89	82	81	†	†	†	†	†	†	†	†	†	†	†	0.00%
VILLAGE PREPARATORY SCHOOL WILLARD	OHIO	Cuyahoga Co	†	50	18	†	†	†	†	†	†	†	†	†	†	†	†	†	†	0.00%
VILLAGE PREPARATORY SCHOOL:: WOODLAND HIL	Ohio	Cuyahoga Co	†	94	84	91	85	85	†	†	†	†	†	†	†	†	†	†	†	0.00%
WADE PARK	Ohio	Cuyahoga Co	17	45	38	43	38	48	36	34	47	33	†	†	†	†	†	†	†	30.08%
WALTON SCHOOL	Ohio	Cuyahoga Co	8	22	35	24	27	26	21	34	24	32	1	†	†	†	†	†	†	35.83%
WARNER GIRLS LEADERSHIP ACADEMY	Ohio	Cuyahoga Co	16	55	42	57	54	48	43	43	47	30	†	†	†	†	†	†	†	27.59%
WARRENSVILLE HEIGHTS HIGH SCHOOL	Ohio	Cuyahoga Co	†	†	†	†	†	†	†	†	†	125	138	100	122	†	†	†	†	100.00%
WARRENSVILLE HEIGHTS MIDDLE SCHOOL	Ohio	Cuyahoga Co	†	†	†	†	†	†	6	100	105	113	†	†	†	†	†	†	†	98.15%
WASHINGTON PARK	Ohio	Cuyahoga Co	†	†	†	†	†	†	†	†	†	82	73	54	56	†	†	†	†	100.00%
WASHINGTON PARK COMMUNITY SCHOOL	Ohio	Cuyahoga Co	†	25	26	24	23	19	24	23	20	17	†	†	†	†	†	†	†	29.85%
WAVERLY ELEMENTARY SCHOOL	Ohio	Cuyahoga Co	17	37	38	37	24	34	32	28	38	23	1	†	†	†	†	†	†	29.13%
WEST PARK ACADEMY	Ohio	Cuyahoga Co	†	22	21	27	35	37	28	26	21	20	†	†	†	†	†	†	†	28.27%
WEST PREPARATORY ACADEMY	Ohio	Cuyahoga Co	†	30	27	35	32	27	29	14	29	24	†	†	†	†	†	†	†	27.13%
WESTERLY ELEMENTARY SCHOOL	Ohio	Cuyahoga Co	†	†	†	189	169	†	†	†	†	†	†	†	†	†	†	†	†	0.00%
WESTLAKE HIGH SCHOOL	Ohio	Cuyahoga Co	†	†	†	†	†	†	†	†	†	†	285	313	281	286	†	†	†	100.00%
WHITNEY ELEMENTARY SCHOOL	Ohio	Cuyahoga Co	†	52	66	66	69	75	62	†	†	†	†	†	†	†	†	†	†	0.00%
WHITNEY YOUNG SCHOOL	Ohio	Cuyahoga Co	†	†	†	†	8	14	19	21	24	30	29	25	34	34	†	†	†	82.77%
WILBUR WRIGHT SCHOOL	Ohio	Cuyahoga Co	32	29	48	48	43	34	35	34	35	38	1	†	†	†	†	†	†	28.65%
WILLIAM C BRYANT ELEMENTARY SCHOOL	Ohio	Cuyahoga Co	15	58	49	52	53	54	43	31	33	52	†	1	†	†	†	†	†	26.53%
WILLIAM FOSTER ELEMENTARY SCHOOL	Ohio	Cuyahoga Co	70	95	89	93	109	86	110	†	†	†	†	†	†	†	†	†	†	0.00%
WILLOW SCHOOL	Ohio	Cuyahoga Co	8	27	22	23	34	24	21	19	24	36	†	†	†	†	†	†	†	33.19%
WILSON SCHOOL	Ohio	Cuyahoga Co	24	42	30	49	46	39	36	26	27	33	†	†	†	†	†	†	†	24.43%
WOODBURY ELEMENTARY SCHOOL	Ohio	Cuyahoga Co	†	†	†	†	†	†	371	372	†	†	†	†	†	†	†	†	†	50.07%
AKRON ALTERNATIVE ACADEMY	Ohio	Summit Coun	†	†	†	†	†	†	†	†	†	†	1	9	45	254	†	†	†	100.00%
AKRON DIGITAL ACADEMY	Ohio	Summit Coun	†	†	†	†	†	†	†	6	19	30	35	58	55	97	†	†	†	100.00%
AKRON EARLY COLLEGE HIGH SCHOOL	Ohio	Summit Coun	†	†	†	†	†	†	†	†	†	†	109	97	89	78	†	†	†	100.00%
AKRON PREPARATORY SCHOOL	Ohio	Summit Coun	†	27	23	26	32	26	28	23	23	22	†	†	†	†	†	†	†	29.57%
AKRON STEM HIGH SCHOOL	Ohio	Summit Coun	†	†	†	†	†	†	†	†	†	†	92	85	73	69	†	†	†	100.00%
AKROS MIDDLE SCHOOL	Ohio	Summit Coun	†	†	†	†	†	†	†	41	43	40	†	†	†	†	†	†	†	100.00%
ARROWHEAD PRIMARY ELEMENTARY SCHOOL	Ohio	Summit Coun	†	66	56	79	77	67	†	†	†	†	†	†	†	†	†	†	†	0.00%
BARBER COMMUNITY LEARNING CENTER	Ohio	Summit Coun	†	38	40	60	42	44	47	33	†	†	†	†	†	†	†	†	†	10.86%
BARBERTON ELEMENTARY SCHOOL EAST	Ohio	Summit Coun	21	116	143	140	142	113	†	†	†	†	†	†	†	†	†	†	†	0.00%
BARBERTON ELEMENTARY SCHOOL WEST	Ohio	Summit Coun	19	125	138	129	138	154	1	†	†	†	†	†	†	†	†	†	†	0.00%
BARBERTON HIGH SCHOOL	Ohio	Summit Coun	†	†	†	†	†	†	†	†	†	†	377	332	348	338	†	†	†	100.00%
BARBERTON MIDDLE SCHOOL	Ohio	Summit Coun	†	†	†	†	†	†	288	273	258	282	†	†	†	†	†	†	†	73.84%
BATH ELEMENTARY SCHOOL	Ohio	Summit Coun	33	†	†	†	†	†	216	188	†	†	†	†	†	†	†	†	†	0.00%
BETTES ELEMENTARY SCHOOL	Ohio	Summit Coun	†	33	35	28	39	31	35	†	†	†	†	†	†	†	†	†	†	0.00%
BETTY JANE COMMUNITY LEARNING CENTER	Ohio	Summit Coun	†	79	79	70	77	82	75	†	†	†	†	†	†	†	†	†	†	0.00%
BOLICH MIDDLE SCHOOL	Ohio	Summit Coun	†	†	†	†	†	†	†	193	222	224	†	†	†	†	†	†	†	100.00%
BRIDGES LEARNING CENTER	Ohio	Summit Coun	†	†	5	5	16	5	4	11	12	1	†	†	†	†	†	†	†	40.68%
BUCHTEL HIGH SCHOOL	Ohio	Summit Coun	†	†	†	†	†	†	†	†	130	132	168	149	154	124	†	†	†	100.00%
CASE ELEMENTARY SCHOOL	Ohio	Summit Coun	†	46	48	56	36	52	48	†	†	†	†	†	†	†	†	†	†	0.00%
COLONIAL PREP ACADEMY	Ohio	Summit Coun	†	28	26	18	28	29	21	29	32	23	†	†	†	†	†	†	†	35.90%
COPLEY HIGH SCHOOL	Ohio	Summit Coun	†	†	†	†	†	†	†	†	†	†	243	278	273	280	†	†	†	100.00%
COPLEY-FAIRLAWN MIDDLE SCHOOL	Ohio	Summit Coun	†	†	†	†	†	†	220	218	195	240	†	†	†	†	†	†	†	74.80%
COVENTRY ELEMENTARY SCHOOL	Ohio	Summit Coun	†	100	134	127	137	147	†	†	†	†	†	†	†	†	†	†	†	0.00%
COVENTRY HIGH SCHOOL	Ohio	Summit Coun	†	†	†	†	†	†	†	†	†	†	197	191	149	158	†	†	†	100.00%
COVENTRY MIDDLE SCHOOL	Ohio	Summit Coun	†	†	†	†	†	†	166	158	168	197	†	†	†	†	†	†	†	75.91%
CROUSE COMMUNITY LEARNING CENTER	Ohio	Summit Coun	†	65	62	55	55	51	63	54	†	†	†	†	†	†	†	†	†	13.33%
CUYAHOGA FALLS HIGH SCHOOL	Ohio	Summit Coun	†	†	†	†	†	†	†	†	†	†	409	369	377	401	†	†	†	100.00%
DAVID BACON SCHOOL	OHIO	Summit Coun	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	N/A
DUNBAR ELEMENTARY SCHOOL	Ohio	Summit Coun	†	140	157	173	†	†	†	†	†	†	†	†	†	†	†	†	†	0.00%
EAST COMMUNITY LEARNING CENTER	Ohio	Summit Coun	†	†	†	†	†	†	†	†	169	178	168	192	174	122	†	†	†	100.00%
EAST WOODS ELEMENTARY SCHOOL	Ohio	Summit Coun	†	†	†	†	†	321	322	†	†	†	†	†	†	†	†	†	†	0.00%
ECHO HILLS ELEMENTARY SCHOOL	Ohio	Summit Coun	†	65	55	52	68	58	†	†	†	†	†	†	†	†	†	†	†	0.00%
EDGE ACADEMY THE	Ohio	Summit Coun	†	44	40	46	40	38	38	†	†	†	†	†	†	†	†	†	†	0.00%
ELIZABETH PRICE ELEMENTARY SCHOOL	Ohio	Summit Coun	†	63	60	52	62	59	54	†	†	†	†	†	†	†	†	†	†	0.00%
ELLET HIGH SCHOOL	Ohio	Summit Coun	†	†	†	†	†	†	†	†	†	†	287	268	258	223	†	†	†	100.00%

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APPENDIX D

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This is a Public School based table with the following filters applied: State(s) [All Years]: All 50 + DC; County Name [Public School] [All Years: 2016-17]: CUYAHOGA COUNTY, SUMMIT COUNTY

School Name	State Name		Prekinderga																Ungraded Students	Grade 6-12 % Enrollment
	[Public School]	County Name	Students	n Students	Students	Students	Students	Students	Students	Students	Students	Students	Students	Students	Students	Students	Students	Students		
Latest available year	[Public School]	[Public School]	[Public School]	[Public School]	[Public School]	[Public School]	[Public School]	[Public School]	[Public School]	[Public School]	[Public School]	[Public School]	[Public School]	[Public School]	[Public School]	[Public School]	[Public School]	[Public School]		
2016-17	2016-17	2016-17	2016-17	2016-17	2016-17	2016-17	2016-17	2016-17	2016-17	2016-17	2016-17	2016-17	2016-17	2016-17	2016-17	2016-17	2016-17	2016-17		
ELLSWORTH HILL ELEMENTARY SCHOOL	Ohio	Summit Coun	55	†	†	300	†	†	†	†	†	†	†	†	†	†	†	†	†	0.00%
EVAMERE ELEMENTARY SCHOOL	Ohio	Summit Coun	†	283	305	†	†	†	†	†	†	†	†	†	†	†	†	†	†	0.00%
FINDLEY COMMUNITY LEARNING CENTER	Ohio	Summit Coun	†	109	96	86	89	78	84	†	†	†	†	†	†	†	†	†	†	0.00%
FIRESTONE HIGH SCHOOL	Ohio	Summit Coun	†	†	†	†	†	†	†	†	†	331	308	346	273	†	†	†	†	100.00%
FIRESTONE PARK ELEMENTARY SCHOOL	Ohio	Summit Coun	†	70	50	66	52	55	40	†	†	†	†	†	†	†	†	†	†	0.00%
FISHCREEK ELEMENTARY SCHOOL	Ohio	Summit Coun	†	61	64	69	65	78	†	†	†	†	†	†	†	†	†	†	†	0.00%
FOREST HILL COMMUNITY LEARNING CENTER	Ohio	Summit Coun	†	64	54	82	64	63	62	†	†	†	†	†	†	†	†	†	†	0.00%
FORT ISLAND PRIMARY ELEMENTARY SCHOOL	Ohio	Summit Coun	†	64	66	61	73	79	†	†	†	†	†	†	†	†	†	†	†	0.00%
GARFIELD HIGH SCHOOL	Ohio	Summit Coun	†	†	†	†	†	†	†	†	†	202	201	169	153	†	†	†	†	100.00%
GEO G DODGE ELEMENTARY SCHOOL	Ohio	Summit Coun	†	†	†	†	†	307	319	348	†	†	†	†	†	†	†	†	†	35.73%
GLOVER COMMUNITY LEARNING CENTER	Ohio	Summit Coun	†	54	56	55	51	49	46	†	†	†	†	†	†	†	†	†	†	0.00%
GORDON DEWITT ELEMENTARY SCHOOL	Ohio	Summit Coun	†	75	79	66	69	73	77	†	†	†	†	†	†	†	†	†	†	0.00%
GREATER SUMMIT COUNTY EARLY LEARNING CENTER	Ohio	Summit Coun	†	32	19	34	27	18	†	†	†	†	†	†	†	†	†	†	†	0.00%
GREEN HIGH SCHOOL	Ohio	Summit Coun	†	†	†	†	†	†	†	†	†	318	295	326	289	†	†	†	†	100.00%
GREEN INTERMEDIATE ELEMENTARY SCHOOL	Ohio	Summit Coun	†	†	†	†	6	317	286	330	†	†	†	†	†	†	†	†	†	35.14%
GREEN MIDDLE SCHOOL	Ohio	Summit Coun	†	†	†	†	†	†	†	†	329	344	†	†	†	†	†	†	†	100.00%
GREEN PRIMARY SCHOOL	Ohio	Summit Coun	†	1	279	288	325	†	†	†	†	†	†	†	†	†	†	†	†	0.00%
GREENWOOD EARLY LEARNING CENTER	Ohio	Summit Coun	53	292	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	0.00%
GRILL ELEMENTARY SCHOOL	Ohio	Summit Coun	57	42	39	26	44	49	†	†	†	†	†	†	†	†	†	†	†	0.00%
HARRIS ELEMENTARY SCHOOL	Ohio	Summit Coun	†	59	63	54	59	54	54	†	†	†	†	†	†	†	†	†	†	0.00%
HATTON CLC	Ohio	Summit Coun	†	88	83	80	92	89	75	†	†	†	†	†	†	†	†	†	†	0.00%
HELEN ARNOLD COMMUNITY LEARNING CENTER	Ohio	Summit Coun	†	45	46	44	41	34	35	40	†	†	†	†	†	†	†	†	†	14.04%
HERBERICH PRIMARY ELEMENTARY SCHOOL	Ohio	Summit Coun	1	57	40	49	51	53	†	†	†	†	†	†	†	†	†	†	†	0.00%
HIGHLAND ELEMENTARY SCHOOL	Ohio	Summit Coun	†	65	59	52	75	55	†	†	†	†	†	†	†	†	†	†	†	0.00%
HILL COMMUNITY LEARNING CENTER	Ohio	Summit Coun	†	47	54	47	53	47	42	43	†	†	†	†	†	†	†	†	†	12.91%
HILLCREST ELEMENTARY SCHOOL	Ohio	Summit Coun	†	140	187	193	207	†	†	†	†	†	†	†	†	†	†	†	†	0.00%
HUDSON HIGH SCHOOL	Ohio	Summit Coun	†	†	†	†	†	†	†	†	†	†	362	381	403	416	†	†	†	100.00%
HUDSON MIDDLE SCHOOL	Ohio	Summit Coun	†	†	†	†	†	†	382	331	398	†	†	†	†	†	†	†	†	100.00%
HYRE COMMUNITY LEARNING CENTER	Ohio	Summit Coun	†	†	†	†	†	†	264	262	271	†	†	†	†	†	†	†	†	100.00%
IMAGINE AKRON ACADEMY	Ohio	Summit Coun	†	52	†	†	†	†	†	†	†	†	†	†	†	†	†	†	†	0.00%
IMAGINE LEADERSHIP ACADEMY	Ohio	Summit Coun	†	†	37	34	30	22	23	19	†	†	†	†	†	†	†	†	†	11.52%
INDIAN TRAIL ELEMENTARY SCHOOL	Ohio	Summit Coun	1	66	58	62	61	75	†	†	†	†	†	†	†	†	†	†	†	0.00%
INNES COMMUNITY LEARNING CENTER	Ohio	Summit Coun	†	†	†	†	†	†	82	121	109	†	†	†	†	†	†	†	†	100.00%
JENNINGS COMMUNITY LEARNING CENTER	Ohio	Summit Coun	†	†	†	†	†	†	195	211	198	†	†	†	†	†	†	†	†	100.00%
JUDITH A RESNIK COMMUNITY LEARNING CENTER	Ohio	Summit Coun	†	78	73	60	69	60	57	†	†	†	†	†	†	†	†	†	†	0.00%
KENMORE HIGH SCHOOL	Ohio	Summit Coun	†	†	†	†	†	†	†	†	†	†	114	114	133	125	†	†	†	100.00%
KENT MIDDLE SCHOOL	Ohio	Summit Coun	†	†	†	†	†	†	†	148	156	144	†	†	†	†	†	†	†	100.00%
KIMPTON MIDDLE SCHOOL	Ohio	Summit Coun	†	†	†	†	†	†	†	377	431	†	†	†	1	†	†	†	†	100.00%
KING ELEMENTARY SCHOOL	Ohio	Summit Coun	†	79	89	78	76	81	63	†	†	†	†	†	†	†	†	†	†	0.00%
LAKEVIEW ELEMENTARY SCHOOL	Ohio	Summit Coun	†	†	†	†	†	†	368	383	†	†	†	†	†	†	†	†	†	51.00%
LEDGEVIEW ELEMENTARY SCHOOL	Ohio	Summit Coun	†	81	81	101	93	112	†	†	†	†	†	†	†	†	†	†	†	0.00%
LEE EATON ELEMENTARY SCHOOL	Ohio	Summit Coun	†	†	†	†	†	†	255	282	†	†	†	†	†	†	†	†	†	52.51%
LEGGETT COMMUNITY LEARNING CENTER	Ohio	Summit Coun	†	61	67	72	72	60	56	†	†	†	†	†	†	†	†	†	†	0.00%
LIFE SKILLS CENTER OF NORTH AKRON	Ohio	Summit Coun	†	†	†	†	†	†	†	†	†	64	18	20	11	†	†	†	†	100.00%
LINCOLN ELEMENTARY SCHOOL	Ohio	Summit Coun	†	82	94	82	95	89	76	†	†	†	†	†	†	†	†	†	†	0.00%
LITCHFIELD MIDDLE SCHOOL	Ohio	Summit Coun	†	†	†	†	†	†	†	195	235	189	†	†	†	†	†	†	†	100.00%
MAIN PREPARATORY ACADEMY	Ohio	Summit Coun	†	25	21	25	23	10	4	†	†	†	†	†	†	†	†	†	†	0.00%
MANCHESTER HIGH SCHOOL	Ohio	Summit Coun	†	†	†	†	†	†	†	†	†	†	116	116	113	106	†	†	†	100.00%
MANCHESTER MIDDLE SCHOOL	Ohio	Summit Coun	†	†	†	†	†	†	98	99	105	104	†	†	†	†	†	†	†	75.86%
MASON COMMUNITY LEARNING CENTER	Ohio	Summit Coun	†	42	33	39	37	41	33	32	†	†	†	†	†	†	†	†	†	12.45%
MCDOWELL ELEMENTARY SCHOOL	Ohio	Summit Coun	†	†	†	†	327	†	†	†	†	†	†	†	†	†	†	†	†	0.00%
MCEBRIGHT COMMUNITY LEARNING CENTER	Ohio	Summit Coun	†	45	50	51	43	45	44	†	†	†	†	†	†	†	†	†	†	0.00%
MIDDLEBURY ACADEMY	Ohio	Summit Coun	†	23	25	22	21	28	21	25	25	18	†	†	†	†	†	†	†	32.69%
MILLER-SOUTH VISUAL PERFORMING ARTS	Ohio	Summit Coun	†	†	†	†	†	72	101	114	112	103	†	†	†	†	†	†	†	65.54%
MOGADORE HIGH SCHOOL	Ohio	Summit Coun	†	†	†	†	†	†	†	†	†	68	74	53	52	†	†	†	†	100.00%
MOGADORE JUNIOR HIGH SCHOOL	Ohio	Summit Coun	†	†	†	†	†	†	†	73	73	†	†	†	†	†	†	†	†	100.00%
MUNROE ELEMENTARY SCHOOL	Ohio	Summit Coun	†	†	†	†	172	181	186	†	†	†	†	†	†	†	†	†	†	0.00%
NATIONAL INVENTORS HALL OF FAME SCHOOL CENTER	Ohio	Summit Coun	†	†	†	†	†	†	107	108	85	90	56	†	†	†	†	†	†	72.56%
NOLLEY ELEMENTARY SCHOOL	Ohio	Summit Coun	†	90	79	102	105	80	†	†	†	†	†	†	†	†	†	†	†	0.00%
NORDONIA HIGH SCHOOL	Ohio	Summit Coun	†	†	†	†	†	†	†	†	†	298	319	305	295	†	†	†	†	100.00%
NORDONIA MIDDLE SCHOOL	Ohio	Summit Coun	†	†	†	†	†	†	†	271	291	†	†	†	†	†	†	†	†	100.00%
NORTH HIGH SCHOOL	Ohio	Summit Coun	†	†	†	†	†	†	†	†	†	251	195	207	196	†	†	†	†	100.00%
NORTHFIELD ELEMENTARY SCHOOL	Ohio	Summit Coun	†	83	76	72	82	100	†	†	†	†	†	†	†	†	†	†	†	0.00%
NORTON CORNERSTONE ELEMENTARY SCHOOL	Ohio	Summit Coun	†	62	75	59	76	74	†	†	†	†	†	†	†	†	†	†	†	0.00%
NORTON HIGH SCHOOL	Ohio	Summit Coun	†	†	†	†	†	†	†	†	†	202	218	222	189	†	†	†	†	100.00%
NORTON JUNIOR HIGH SCHOOL	Ohio	Summit Coun	†	†	†	†	†	180	201	206	192	†	†	†	†	†	†	†	†	76.89%
NORTON PRIMARY ELEMENTARY SCHOOL	Ohio	Summit Coun	†	70	74	62	75	77	†	†	†	†	†	†	†	†	†	†	†	0.00%

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This is a Public School based table with the following filters applied: State(s) (All Years): All 50 + DC; County Name [Public School] (All Years: 2016-17): CUYAHOGA COUNTY, SUMMIT COUNTY

School Name	State Name		Prekinderga																Grade 6-12 % Enrollment
	[Public School]	County Name	Students	n Students	Students	Students	Students	Students	Students	Students	Students	Students	Students	Students	Students	Students	Students	Students	
Latest available year	[Public School]	[Public School]	[Public School]	[Public School]	[Public School]	[Public School]	[Public School]	[Public School]	[Public School]	[Public School]	[Public School]	[Public School]	[Public School]	[Public School]	[Public School]	[Public School]	[Public School]	[Public School]	
2016-17	2016-17	2016-17	2016-17	2016-17	2016-17	2016-17	2016-17	2016-17	2016-17	2016-17	2016-17	2016-17	2016-17	2016-17	2016-17	2016-17	2016-17	2016-17	
O H SOMERS ELEMENTARY SCHOOL	Ohio	Summit Coun	†	58	57	61	79	72	62	72	†	†	†	†	†	†	†	†	15.62%
PFEIFFER ELEMENTARY SCHOOL	Ohio	Summit Coun	†	35	42	28	31	39	34	†	†	†	†	†	†	†	†	†	0.00%
PORTAGE LAKES CAREER CENTER	Ohio	Summit Coun	†	†	†	†	†	†	†	†	†	†	†	0	0	0	†	†	N/A
PORTAGE PATH COMMUNITY LEARNING CENTER	Ohio	Summit Coun	†	47	58	56	64	51	68	†	†	†	†	†	†	†	†	†	0.00%
PRESTON ELEMENTARY SCHOOL	Ohio	Summit Coun	†	41	45	49	47	48	47	†	†	†	†	†	†	†	†	†	0.00%
R B CHAMBERLIN MIDDLE SCHOOL	Ohio	Summit Coun	†	†	†	†	†	†	†	†	320	316	†	†	†	†	†	†	100.00%
REVERE HIGH SCHOOL	Ohio	Summit Coun	†	†	†	†	†	†	†	†	†	†	196	228	212	214	†	†	100.00%
REVERE MIDDLE SCHOOL	Ohio	Summit Coun	†	†	†	†	†	†	†	†	213	200	226	†	†	†	†	†	100.00%
RICHARDSON ELEMENTARY SCHOOL	Ohio	Summit Coun	†	76	76	67	71	66	68	†	†	†	†	†	†	†	†	†	0.00%
RIMER COMMUNITY LEARNING CENTER	Ohio	Summit Coun	†	50	38	60	48	50	46	†	†	†	†	†	†	†	†	†	0.00%
RITZMAN COMMUNITY LEARNING CENTER	Ohio	Summit Coun	†	75	59	63	68	70	52	†	†	†	†	†	†	†	†	†	0.00%
RIVERVIEW ELEMENTARY SCHOOL	Ohio	Summit Coun	†	65	65	59	51	62	†	†	†	†	†	†	†	†	†	†	0.00%
ROBERTS MIDDLE SCHOOL	Ohio	Summit Coun	†	†	†	†	†	†	†	128	165	152	†	†	†	†	†	†	100.00%
ROBINSON COMMUNITY LEARNING CENTER	Ohio	Summit Coun	†	49	46	43	46	48	46	33	†	†	†	†	†	†	†	†	†
RUSHWOOD ELEMENTARY SCHOOL	Ohio	Summit Coun	†	65	89	63	96	97	†	†	†	†	†	†	†	†	†	†	0.00%
SAM SALEM COMMUNITY LEARNING CENTER	Ohio	Summit Coun	†	73	49	66	56	55	32	†	†	†	†	†	†	†	†	†	0.00%
SAMUEL BISSELL ELEMENTARY SCHOOL	Ohio	Summit Coun	†	†	†	281	310	†	†	†	†	†	†	†	†	†	†	†	0.00%
SCHNEE LEARNING CENTER	Ohio	Summit Coun	†	†	†	†	†	†	†	†	†	†	4	15	39	47	†	†	100.00%
SCHROP INTERMEDIATE SCHOOL	Ohio	Summit Coun	†	†	†	†	†	163	179	136	†	†	†	†	†	†	†	†	28.45%
SCHUMACHER COMMUNITY LEARNING CENT	Ohio	Summit Coun	†	58	66	70	65	77	55	55	†	†	†	†	†	†	†	†	12.33%
SEIBERLING CLC	Ohio	Summit Coun	†	80	85	79	72	58	48	54	†	†	†	†	†	†	†	†	11.34%
SILVER LAKE ELEMENTARY SCHOOL	Ohio	Summit Coun	†	46	33	45	37	42	29	†	†	†	†	†	†	†	†	†	0.00%
SPRING HILL ELEMENTARY	Ohio	Summit Coun	61	100	83	82	97	†	†	†	†	†	†	†	†	†	†	†	0.00%
SPRINGFIELD JUNIOR/SENIOR HIGH SCHOOL	Ohio	Summit Coun	†	†	†	†	†	†	†	†	179	176	196	188	133	161	†	†	100.00%
STEAM ACADEMY OF AKRON	Ohio	Summit Coun	†	27	29	29	24	27	21	19	†	†	†	†	†	†	†	†	10.80%
STEEL ACADEMY	OHIO	Summit Coun	†	†	†	†	†	†	10	15	18	13	19	14	18	†	†	†	100.00%
STOW-MUNROE FALLS HIGH SCHOOL	Ohio	Summit Coun	†	†	†	†	†	†	†	†	†	†	406	434	487	464	†	†	100.00%
SUMMIT ACADEMY AKRON ELEMENTARY SCHOOL	Ohio	Summit Coun	†	16	20	21	29	20	25	†	†	†	†	†	†	†	†	†	0.00%
SUMMIT ACADEMY AKRON MIDDLE SCHOOL	Ohio	Summit Coun	†	†	†	†	†	†	†	23	15	21	†	†	†	†	†	†	100.00%
SUMMIT ACADEMY SECONDARY - AKRON	Ohio	Summit Coun	†	†	†	†	†	†	†	†	†	†	23	30	10	10	†	†	100.00%
TALLMADGE HIGH SCHOOL	Ohio	Summit Coun	†	†	†	†	†	†	†	†	†	†	209	206	206	200	†	†	100.00%
TALLMADGE MIDDLE SCHOOL	Ohio	Summit Coun	†	†	†	†	†	†	†	199	184	173	†	†	†	†	†	†	100.00%
TOWPATH TRAIL HIGH SCHOOL	Ohio	Summit Coun	†	†	†	†	†	†	†	†	†	†	83	53	66	75	†	†	100.00%
TWINSBURG HIGH SCHOOL	Ohio	Summit Coun	†	†	†	†	†	†	†	†	†	†	324	323	325	305	†	†	100.00%
UNIVERSITY ACADEMY	Ohio	Summit Coun	†	29	24	23	19	15	12	11	24	14	†	†	†	†	†	†	28.65%
VORIS COMMUNITY LEARNING CENTER	Ohio	Summit Coun	†	56	59	71	46	54	41	†	†	†	†	†	†	†	†	†	0.00%
WILCOX ELEMENTARY SCHOOL	Ohio	Summit Coun	64	253	303	†	†	†	†	†	†	†	†	†	†	†	†	†	0.00%
WINDEMERE CLC	Ohio	Summit Coun	†	47	34	50	49	68	42	†	†	†	†	†	†	†	†	†	0.00%
WOODLAND ELEMENTARY SCHOOL	Ohio	Summit Coun	†	64	45	53	49	64	†	†	†	†	†	†	†	†	†	†	0.00%
WOODRIDGE HIGH SCHOOL	Ohio	Summit Coun	†	†	†	†	†	†	†	†	†	†	164	172	172	187	†	†	100.00%
WOODRIDGE INTERMEDIATE ELEMENTARY SCHOO	Ohio	Summit Coun	†	†	†	†	130	129	148	†	†	†	†	†	†	†	†	†	0.00%
WOODRIDGE MIDDLE SCHOOL	Ohio	Summit Coun	†	†	†	†	†	†	†	153	144	154	†	†	†	†	†	†	100.00%
WOODRIDGE PRIMARY ELEMENTARY SCHOOL	Ohio	Summit Coun	30	135	164	119	1	4	†	†	†	†	†	†	†	†	†	†	0.00%
YOUNG ELEMENTARY SCHOOL	Ohio	Summit Coun	†	61	53	78	87	†	†	†	†	†	†	†	†	†	†	†	0.00%
Totals:	n/a	n/a	4,572	17,048	17,274	17,508	18,280	17,928	17,846	17,360	18,078	18,102	20,175	19,504	19,120	19,212	†	†	

Data Source: U.S. Department of Education, National Center for Education Statistics, Common Core of Data (CCD), "Public Elementary/Secondary School Universe Survey", 2016-17 v.1a; "Public Elementary/Secondary School Universe Survey Geographic Data (EDGE)", 2016-17 v.1a

† indicates that the data are not applicable.

- indicates that the data are missing.

‡ indicates that the data do not meet NCES data quality standards.

CONFIDENTIAL

APPENDIX D

Cuyahoga County, private enrollment, grade 6-12	15,106	pre-k kindergarten	grade 1	grade 2	grade 3	grade 4	grade 5	grade 6	grade 7	grade 8	grade 9	grade 10	grade 11	grade 12	ungraded	Est # of MS/HS		
Summit County, private enrollment, grade 6-12	5,322	2,176	2,058	1,942	1,922	1,950	1,903	2,010	2,072	2,068	1,994	2,338	2,331	2,196	2,107	517	Cuyahoga County	70
		698	809	710	678	710	669	680	727	629	684	842	792	855	793	0	Summit County	26

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This is a Private School based table with the following filters applied: State(s) (All Years): All 50 + DC; County Name [Private School] (All Years: 2015-16): CUYAHOGA, SUMMIT

Private School Name	State Name [Private School] Latest available year	County Name [Private School] 2015-16	Prekindergarten Students [Private School] 2015-16	Kindergarten Students [Private School] 2015-16	Grade 1 Students [Private School] 2015-16	Grade 2 Students [Private School] 2015-16	Grade 3 Students [Private School] 2015-16	Grade 4 Students [Private School] 2015-16	Grade 5 Students [Private School] 2015-16	Grade 6 Students [Private School] 2015-16	Grade 7 Students [Private School] 2015-16	Grade 8 Students [Private School] 2015-16	Grade 9 Students [Private School] 2015-16	Grade 10 Students [Private School] 2015-16	Grade 11 Students [Private School] 2015-16	Grade 12 Students [Private School] 2015-16	Ungraded Students [Private School] 2015-16	Grade 6-12 % Enrollment
ACADEMY OF ST ADALBERT	OHIO	CUYAHOGA	19	22	20	23	20	11	15	24	15	12	-	-	-	-	-	28.18%
ACADEMY OF ST BARTHOLOMEW	OHIO	CUYAHOGA	25	15	17	22	28	23	31	31	37	39	-	-	-	-	-	39.93%
AGNON SCHOOL	OHIO	CUYAHOGA	82	33	26	25	29	39	25	45	32	13	-	-	-	-	-	25.79%
AL IHSAN SCHOOL	OHIO	CUYAHOGA	-	25	21	20	21	14	8	9	10	10	-	-	-	-	-	21.01%
ARCHBISHOP LYKE-ST HENRY CAMPUS	OHIO	CUYAHOGA	-	25	28	44	37	35	38	29	32	27	-	-	-	-	-	29.83%
ARCHBISHOP LYKE-ST TIMOTHY CAMPUS	OHIO	CUYAHOGA	-	-	-	-	-	-	35	29	32	26	-	-	-	-	-	71.31%
ASSUMPTION ACADEMY	OHIO	CUYAHOGA	-	-	23	19	39	19	28	31	19	30	-	-	-	-	-	38.46%
BEATRICE STONE YAVNE HIGH SCHOOL	OHIO	CUYAHOGA	-	-	-	-	-	-	-	-	35	27	26	27	27	21	-	100.00%
BEAUMONT SCHOOL	OHIO	CUYAHOGA	-	-	-	-	-	-	-	-	-	-	78	88	92	79	-	100.00%
BENEDICTINE HIGH SCHOOL	OHIO	CUYAHOGA	-	-	-	-	-	-	-	-	-	-	113	98	94	98	-	100.00%
BETHANY LUTHERAN SCHOOL	OHIO	CUYAHOGA	31	14	14	25	22	25	19	18	19	42	-	-	-	-	-	34.50%
BETHEL CHRISTIAN ACADEMY	OHIO	CUYAHOGA	20	24	20	20	12	12	8	17	14	7	-	-	-	-	-	24.68%
BETHLEHEM CHRISTIAN ACADEMY	OHIO	CUYAHOGA	18	11	15	11	6	4	6	5	-	-	-	-	-	-	-	6.58%
BIRCHWOOD SCHOOL	OHIO	CUYAHOGA	27	25	21	24	20	15	24	15	17	11	-	-	-	-	-	21.61%
BUCKEYE EDUCATION	OHIO	CUYAHOGA	-	-	-	-	2	2	4	5	4	1	2	3	3	2	-	71.43%
CLEVELAND CENTRAL CATHOLIC HIGH SCHOOL	OHIO	CUYAHOGA	-	-	-	-	-	-	-	-	-	-	181	164	158	129	-	100.00%
COMMUNION OF SAINTS SCHOOL	OHIO	CUYAHOGA	-	46	30	22	26	21	21	23	26	26	-	-	-	-	4	31.12%
GESU ELEMENTARY SCHOOL	OHIO	CUYAHOGA	75	75	67	54	74	71	69	77	74	63	-	-	-	-	-	30.62%
GILMOUR ACADEMY	OHIO	CUYAHOGA	51	20	14	14	17	15	20	20	25	23	103	120	98	115	-	76.95%
HANNA PERKINS SCHOOL	OHIO	CUYAHOGA	12	2	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00%
HATHAWAY BROWN SCHOOL	OHIO	CUYAHOGA	85	34	34	27	29	30	47	57	54	67	96	108	97	85	-	66.35%
HERITAGE CHRISTIAN SCHOOL	OHIO	CUYAHOGA	11	11	10	8	7	8	11	11	12	10	13	11	13	13	-	55.70%
HOLY FAMILY SCHOOL	OHIO	CUYAHOGA	27	24	20	22	23	29	24	26	11	14	-	-	-	-	-	23.18%
HOLY NAME ELEMENTARY SCHOOL	OHIO	CUYAHOGA	-	28	25	23	21	27	22	27	24	30	-	-	-	-	-	35.68%
HOLY NAME HIGH SCHOOL	OHIO	CUYAHOGA	-	-	-	-	-	-	-	-	-	-	154	159	144	131	-	100.00%
HORIZON MONTESSORI SCHOOL	OHIO	CUYAHOGA	50	10	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00%
JOHN PAUL II ACADEMY	OHIO	CUYAHOGA	12	25	11	19	18	20	12	20	24	15	-	-	-	-	-	33.52%
JULIE BILLIART SCHOOL	OHIO	CUYAHOGA	-	11	12	12	14	14	16	16	16	13	-	-	-	-	-	36.29%
LAKEWOOD CATHOLIC ACADEMY	OHIO	CUYAHOGA	56	53	52	57	60	55	58	49	58	49	-	-	-	-	-	28.52%
LAKEWOOD LUTHERAN SCHOOL	OHIO	CUYAHOGA	-	6	5	3	2	2	1	2	3	4	-	-	-	-	-	32.14%
LAWERENCE SCHOOL - LOWER	OHIO	CUYAHOGA	-	3	1	5	9	14	41	35	-	-	-	-	-	-	-	32.41%
LE CHAPERON ROUGE	OHIO	CUYAHOGA	-	10	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00%
LE CHAPERON ROUGE - INDEPENDENCE	OHIO	CUYAHOGA	63	15	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00%
LE CHAPERON ROUGE ELEMENTARY	OHIO	CUYAHOGA	-	18	10	3	2	-	-	-	-	-	-	-	-	-	-	0.00%
LEWIS LITTLE FOLKS	OHIO	CUYAHOGA	112	10	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00%
LUTHERAN HIGH SCHOOL EAST	OHIO	CUYAHOGA	-	-	-	-	-	-	-	-	-	-	92	70	58	47	-	100.00%
LUTHERAN HIGH WEST	OHIO	CUYAHOGA	-	-	-	-	-	-	-	-	-	-	100	103	112	101	-	100.00%
LYCEUM- THE	OHIO	CUYAHOGA	-	-	-	-	-	-	-	7	10	6	12	7	10	7	-	100.00%
MAGNIFICAT HIGH SCHOOL	OHIO	CUYAHOGA	-	-	-	-	-	-	-	-	-	-	185	186	201	182	-	100.00%
MARY QUEEN OF PEACE SCHOOL	OHIO	CUYAHOGA	22	34	40	34	31	34	35	30	27	17	-	-	-	-	-	24.34%
MESSIAH LUTHERAN SCHOOL	OHIO	CUYAHOGA	19	12	9	11	13	9	9	12	19	20	-	-	-	-	-	38.35%
METRO CATHOLIC SCHOOL	OHIO	CUYAHOGA	42	58	57	59	70	54	49	62	67	57	-	-	-	-	-	32.35%
MONTESSORI HIGH SCHOOL AT UNIVERSITY CIRCLE	OHIO	CUYAHOGA	-	-	-	-	-	-	-	-	-	-	16	28	20	33	-	100.00%
MONTESSORI SCHOOL AT HOLY ROSARY	OHIO	CUYAHOGA	45	19	11	16	8	5	8	10	7	3	-	-	-	-	-	15.15%
MOSDOS OHR HATORAH GIRLS' DIVISION	OHIO	CUYAHOGA	74	64	56	50	41	41	35	36	34	35	15	10	9	12	-	29.49%
OUR LADY OF ANGELS SCHOOL	OHIO	CUYAHOGA	-	49	56	41	57	58	59	59	59	66	-	-	-	-	-	36.58%
OUR LADY OF MOUNT CARMEL	OHIO	CUYAHOGA	27	32	24	26	19	24	16	27	17	19	-	-	-	-	-	27.27%
PADUA FRANCISCAN HIGH SCHOOL	OHIO	CUYAHOGA	-	-	-	-	-	-	-	-	-	-	189	196	177	184	-	100.00%
PARMA HEIGHTS CHRISTIAN ACADEMY	OHIO	CUYAHOGA	-	22	19	27	24	25	18	16	-	-	-	-	-	-	-	10.60%
RAMAH JUNIOR ACADEMY	OHIO	CUYAHOGA	10	10	12	12	8	10	7	11	14	9	-	-	-	-	-	33.01%
ROYAL REDEEMER LUTHERAN SCHOOL	OHIO	CUYAHOGA	133	74	37	36	26	29	20	22	20	21	-	-	-	-	-	15.07%
RUFFING MONTESSORI SCHOOL	OHIO	CUYAHOGA	61	26	32	27	32	30	28	22	27	20	-	-	-	-	-	22.62%
SACRED HEART OF JESUS ACADEMY	OHIO	CUYAHOGA	17	13	23	15	16	22	24	24	23	15	-	-	-	-	-	32.29%
SCRIBES & SCRIBBLERS CHILD DEVELOPMENT CENTER	OHIO	CUYAHOGA	55	17	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00%
SOUTH SUBURBAN MONTESSORI	OHIO	CUYAHOGA	45	24	14	8	5	5	10	9	3	4	-	-	-	-	-	12.60%
SS AGATHA - ALOYSIUS SCHOOL	OHIO	CUYAHOGA	9	14	16	22	19	16	13	12	18	11	-	-	-	-	-	27.33%
SS ROBERT & WILLIAM CATHOLIC SCHOOL	OHIO	CUYAHOGA	44	42	57	53	51	60	51	50	65	66	-	-	-	-	-	33.58%
ST ADALBERT CATHOLIC SCHOOL	OHIO	CUYAHOGA	19	37	42	47	28	29	31	29	25	19	-	-	-	-	-	23.86%
ST ALBERT THE GREAT SCHOOL	OHIO	CUYAHOGA	90	80	89	86	93	83	84	85	76	77	-	-	-	-	-	28.23%
ST ANGELA MERICI ELEMENTARY SCHOOL	OHIO	CUYAHOGA	67	38	45	56	45	36	41	55	46	52	-	-	-	-	-	31.81%

ELSI Export

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This is a Private School based table with the following filters applied: State(s) (All Years): All 50 + DC; County Name (Private School) (All Years: 2015-16): CUYAHOGA, SUMMIT

Private School Name	State Name [Private School]	County Name [Private School]	Prekinderga rten Students [Private School]	Kindergarte n Students [Private School]	Grade 1 Students [Private School]	Grade 2 Students [Private School]	Grade 3 Students [Private School]	Grade 4 Students [Private School]	Grade 5 Students [Private School]	Grade 6 Students [Private School]	Grade 7 Students [Private School]	Grade 8 Students [Private School]	Grade 9 Students [Private School]	Grade 10 Students [Private School]	Grade 11 Students [Private School]	Grade 12 Students [Private School]	Ungraded Students [Private School]	Grade 6-12 % Enrollment
ST BERNADETTE ELEMENTARY SCHOOL	OHIO	CUYAHOGA	61	42	34	46	48	57	39	53	49	43	-	-	-	-	-	30.72%
ST BRENDAN CATHOLIC SCHOOL	OHIO	CUYAHOGA	37	20	13	20	21	24	28	22	16	30	-	-	-	-	-	29.44%
ST CHARLES SCHOOL	OHIO	CUYAHOGA	49	31	37	33	41	54	51	56	56	53	-	-	-	-	-	35.79%
ST CHRISTOPHER SCHOOL	OHIO	CUYAHOGA	-	27	44	35	47	39	41	27	40	39	-	-	-	-	-	31.27%
ST CLARE SCHOOL	OHIO	CUYAHOGA	41	21	19	17	21	16	19	12	22	21	-	-	-	-	-	26.32%
ST COLUMBKILLE PARISH SCHOOL	OHIO	CUYAHOGA	27	36	43	37	44	42	55	40	52	42	-	-	-	-	-	32.06%
ST DOMINIC SCHOOL	OHIO	CUYAHOGA	-	20	18	23	23	20	16	19	27	18	-	-	-	-	-	34.78%
ST EDWARD HIGH SCHOOL	OHIO	CUYAHOGA	-	-	-	-	-	-	-	-	-	-	232	240	237	237	-	100.00%
ST FRANCIS OF ASSISI SCHOOL	OHIO	CUYAHOGA	47	31	38	25	41	40	47	43	36	46	-	-	-	-	-	31.73%
ST FRANCIS SCHOOL	OHIO	CUYAHOGA	-	27	23	29	19	23	28	25	21	20	-	-	-	-	-	30.70%
ST IGNATIUS OF ANTIOCH ELEMENTARY SCHOOL	OHIO	CUYAHOGA	-	38	38	29	28	35	31	25	37	26	-	-	-	-	-	30.66%
ST JEROME ELEMENTARY SCHOOL	OHIO	CUYAHOGA	11	26	26	32	26	22	20	18	23	23	-	-	-	-	-	28.19%
ST JOHN LUTHERAN SCHOOL	OHIO	CUYAHOGA	-	3	9	10	11	10	6	10	12	9	-	-	-	-	-	38.75%
ST JOHN LUTHERAN SCHOOL	OHIO	CUYAHOGA	-	13	14	21	16	11	21	17	20	21	-	-	-	-	-	37.66%
ST JOHN OF THE CROSS SCHOOL	OHIO	CUYAHOGA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6	N/A
ST JOSEPH ACADEMY	OHIO	CUYAHOGA	-	-	-	-	-	-	-	-	-	-	186	183	176	161	-	100.00%
ST MARK CATHOLIC SCHOOL	OHIO	CUYAHOGA	14	47	43	43	39	42	41	55	52	50	-	-	-	-	-	36.85%
ST MARTIN DE PORRES HIGH SCHOOL	OHIO	CUYAHOGA	-	-	-	-	-	-	-	-	-	-	124	122	84	75	-	100.00%
ST MARY BYZANTINE SCHOOL	OHIO	CUYAHOGA	15	20	20	15	23	17	20	15	17	16	-	-	-	-	-	26.97%
ST MARY OF THE FALLS SCHOOL	OHIO	CUYAHOGA	10	21	24	23	23	27	26	28	17	22	-	-	-	-	-	30.32%
ST MARY SCHOOL	OHIO	CUYAHOGA	71	28	31	30	26	38	30	31	23	28	-	-	-	-	-	24.40%
ST PAUL LUTHERAN SCHOOL	OHIO	CUYAHOGA	36	18	14	23	19	24	22	24	20	33	-	-	-	-	-	33.05%
ST ROCCO SCHOOL	OHIO	CUYAHOGA	35	21	24	22	24	15	17	14	16	11	-	-	-	-	-	20.60%
ST STANISLAUS SCHOOL	OHIO	CUYAHOGA	-	22	17	19	27	25	39	42	48	50	-	-	-	-	-	48.44%
ST THOMAS AQUINAS SCHOOL	OHIO	CUYAHOGA	-	26	33	21	25	21	18	27	30	17	-	-	-	-	-	33.94%
STRONGSVILLE MONTESSORI	OHIO	CUYAHOGA	-	19	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00%
STS JOSEPH & JOHN INTERPAROCHIAL SCHOOL	OHIO	CUYAHOGA	-	74	74	79	69	80	77	69	81	63	-	-	-	-	-	31.98%
THE LILLIAN & BETTY RATNER SCHOOL	OHIO	CUYAHOGA	70	12	16	15	8	13	15	11	7	13	-	-	-	-	-	17.22%
TRINITY HIGH SCHOOL	OHIO	CUYAHOGA	-	-	-	-	-	-	-	-	-	-	68	89	75	95	-	100.00%
UNIVERSITY SCHOOL	OHIO	CUYAHOGA	-	32	34	35	43	39	57	64	70	86	103	107	103	104	-	72.63%
UNIVERSITY SCHOOL SHAKER CAMPUS	OHIO	CUYAHOGA	-	32	34	36	43	38	57	64	70	85	105	105	105	105	-	72.70%
URBAN COMMUNITY SCHOOL	OHIO	CUYAHOGA	54	54	66	57	56	46	46	43	42	39	-	-	-	-	507	24.65%
VILLA ANGELA-ST JOSEPH HIGH SCHOOL	OHIO	CUYAHOGA	-	-	-	-	-	-	-	-	-	-	137	107	103	91	-	100.00%
WEST PARK LUTHERAN SCHOOL	OHIO	CUYAHOGA	-	4	7	3	3	2	6	5	8	1	-	-	-	-	-	35.90%
WESTSHORE MONTESSORI SCHOOL	OHIO	CUYAHOGA	43	15	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00%
WESTSIDE CHRISTIAN ACADEMY	OHIO	CUYAHOGA	-	18	14	16	12	8	17	14	6	13	8	-	-	-	-	32.54%
ABSORBENT MINDS MONTESSORI SCHOOL	OHIO	SUMMIT	73	8	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00%
AKRON FIRST ACADEMY & PRESCHOOL	OHIO	SUMMIT	60	11	8	9	5	9	3	-	-	-	-	-	-	-	-	0.00%
AKRON MONTESSORI SCHOOL	OHIO	SUMMIT	48	16	8	3	3	-	-	-	-	-	-	-	-	-	-	0.00%
ARCHBISHOP HOBAN HIGH SCHOOL	OHIO	SUMMIT	-	-	-	-	-	-	-	-	-	-	217	214	227	197	-	100.00%
ARLINGTON CHRISTIAN ACADEMY	OHIO	SUMMIT	-	14	14	12	16	15	11	7	5	11	-	-	-	-	-	21.90%
CHAPEL HILL CHRISTIAN SCHOOL	OHIO	SUMMIT	28	42	49	33	40	37	22	30	-	-	-	-	-	-	-	10.68%
CHAPEL HILL CHRISTIAN SCHOOL-GREEN CAMPUS	OHIO	SUMMIT	34	36	41	24	24	21	13	17	-	-	-	-	-	-	-	8.10%
DISCOVERY MONTESSORI SCHOOL	OHIO	SUMMIT	29	16	5	7	2	1	1	-	-	-	-	-	-	-	-	0.00%
EMMANUEL CHRISTIAN ACADEMY	OHIO	SUMMIT	27	24	26	24	20	23	19	20	25	17	-	-	-	-	-	27.56%
FAITH ISLAMIC ACADEMY	OHIO	SUMMIT	15	10	16	14	8	11	4	11	4	8	-	-	-	-	-	22.77%
HOLY FAMILY GRADE SCHOOL	OHIO	SUMMIT	-	42	44	37	59	47	61	39	49	57	-	-	-	-	-	33.33%
HUDSON MONTESSORI SCHOOL	OHIO	SUMMIT	25	50	17	17	17	16	16	16	7	7	-	-	-	-	-	15.96%
IMMACULATE HEART OF MARY SCHOOL	OHIO	SUMMIT	-	29	31	33	30	36	40	38	41	38	-	-	-	-	-	37.03%
KIDS COUNTRY	OHIO	SUMMIT	28	16	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00%
MAYFAIR CHRISTIAN SCHOOL	OHIO	SUMMIT	-	7	13	3	10	5	7	3	2	4	-	-	-	-	-	16.67%
MOGADORE CHRISTIAN ACADEMY	OHIO	SUMMIT	-	-	-	-	-	-	-	1	3	1	3	2	2	3	-	100.00%
NORTHFIELD BAPTIST CHRISTIAN SCHOOL	OHIO	SUMMIT	12	9	9	9	9	6	12	-	-	-	-	-	-	-	-	16.67%
OUR LADY OF THE ELMS ELEMENTARY SCHOOL	OHIO	SUMMIT	32	10	10	9	12	18	12	22	-	-	-	-	-	-	-	17.60%
OUR LADY OF THE ELMS HIGH SCHOOL	OHIO	SUMMIT	-	-	-	-	-	-	-	15	16	26	25	37	38	-	-	100.00%
PHOENIX SCHOOL	OHIO	SUMMIT	-	-	-	-	-	-	-	2	5	12	10	8	4	2	-	100.00%
PRIMROSE SCHOOL OF HUDSON	OHIO	SUMMIT	50	15	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00%
REDEMER CHRISTIAN SCHOOL	OHIO	SUMMIT	40	24	22	21	15	16	19	21	13	21	-	-	-	-	-	25.94%
SETON CATHOLIC ELEMENTARY SCHOOL	OHIO	SUMMIT	-	47	44	41	56	49	60	47	40	45	-	-	-	-	-	30.77%
ST ANTHONY OF PADUA ELEMENTARY SCHOOL	OHIO	SUMMIT	-	14	13	18	17	23	14	18	18	17	-	-	-	-	-	34.87%
ST AUGUSTINE ELEMENTARY SCHOOL	OHIO	SUMMIT	-	33	27	16	22	23	25	28	28	34	-	-	-	-	-	38.14%
ST BARNABAS SCHOOL	OHIO	SUMMIT	70	49	47	66	52	49	63	81	59	68	-	-	-	-	-	34.44%
ST BERNARD-ST MARY ELEMENTARY SCHOOL	OHIO	SUMMIT	-	26	18	25	21	20	14	25	30	23	-	-	-	-	-	38.61%
ST FRANCIS DE SALES SCHOOL	OHIO	SUMMIT	16	29	26	29	26	25	40	39	25	43	-	-	-	-	-	35.91%

ELSI Export

National Center for Education Statistics - <http://nces.ed.gov/ccd/elsi/>

This is a Private School based table with the following filters applied: State(s) (All Years): All 50 + DC; County Name [Private School] (All Years: 2015-16): CUYAHOGA, SUMMIT

Private School Name	State Name [Private School]	County Name [Private School]	Prekindergarten Students [Private School]	Kindergarten Students [Private School]	Grade 1 Students [Private School]	Grade 2 Students [Private School]	Grade 3 Students [Private School]	Grade 4 Students [Private School]	Grade 5 Students [Private School]	Grade 6 Students [Private School]	Grade 7 Students [Private School]	Grade 8 Students [Private School]	Grade 9 Students [Private School]	Grade 10 Students [Private School]	Grade 11 Students [Private School]	Grade 12 Students [Private School]	Ungraded Students [Private School]	Grade 6-12 % Enrollment
ST HILARY ELEMENTARY SCHOOL	OHIO	SUMMIT	–	63	72	56	69	63	60	74	75	81	–	–	–	–	–	37.52%
ST JOSEPH SCHOOL	OHIO	SUMMIT	20	22	22	27	32	25	31	28	35	35	–	–	–	–	–	35.38%
ST MATTHEW PARISH SCHOOL	OHIO	SUMMIT	13	17	16	23	30	23	16	31	24	27	–	–	–	–	–	37.27%
ST PAUL SCHOOL	OHIO	SUMMIT	6	24	14	20	16	17	18	16	21	21	–	–	–	–	–	33.53%
ST PEREGRINE ACADEMY	OHIO	SUMMIT	–	3	3	3	2	2	1	4	2	2	3	2	–	2	–	51.72%
ST SEBASTIAN SCHOOL	OHIO	SUMMIT	36	40	38	43	38	36	48	39	36	41	–	–	–	–	–	29.37%
ST VINCENT DEPAUL ELEMENTARY SCHOOL	OHIO	SUMMIT	20	25	25	25	25	25	25	25	25	25	–	–	–	–	–	30.61%
ST VINCENT-ST MARY HIGH SCHOOL	OHIO	SUMMIT	–	–	–	–	–	–	–	–	–	–	203	166	185	151	–	100.00%
SUMMIT CHRISTIAN SCHOOL	OHIO	SUMMIT	–	20	18	17	15	8	15	13	19	9	–	–	–	–	–	30.60%
SUPER LEARNING CENTERS FAITH CHRISTIAN ACADEMY	OHIO	SUMMIT	–	1	1	5	4	4	7	12	17	14	19	9	19	11	–	82.11%
TALLMADGE KIDDIE COLLEGE / FACT ACADEMY	OHIO	SUMMIT	16	–	4	–	3	2	–	1	–	–	–	–	–	–	–	3.85%
THE LIPPMAN SCHOOL	OHIO	SUMMIT	–	17	9	9	12	14	9	7	6	7	–	–	–	–	–	22.22%
WALSH JESUIT HIGH SCHOOL	OHIO	SUMMIT	–	–	–	–	–	–	–	–	–	–	274	270	272	283	–	100.00%
WESTERN RESERVE ACADEMY	OHIO	SUMMIT	–	–	–	–	–	–	–	–	–	–	87	96	109	106	–	100.00%
Totals:	n/a	n/a	‡	2,867	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	‡	

Data Source: U.S. Department of Education, National Center for Education Statistics, "Private School Universe Survey (PSS)", 2015-16.

† indicates that the data are not applicable.

– indicates that the data are missing.

‡ indicates that the data do not meet NCES data quality standards.

CONFIDENTIAL**APPENDIX D**

	Cuyahoga	Summit
Physicians (MDs & DOs)	7,080	1,916
% of physicians to target	10%	10%
Physicians to target for education	708	192
Physicians reached per visit	1.3	1.3
Target # of visits per year per physician	2	2
Target # of visits per year	1,089	295
Visits completed per FTE per year	384	384
Estimated # of FTEs	2.8	0.8
Estimated # of FTEs (rounded)	3	1

Estimated average cost of drug disposal site, 2018\$
 Estimated average cost of drug-take back event, 2018\$

\$3,000
\$2,250

<https://www.kingcounty.gov/depts/health/board-of-health/regulations/secure-medicine/~media/depts/health/board-of-health/documents/securemed/DefiningCostsResponsibility.ashx>

Examples of Actual Medicine Take-Back Programs

	British Columbia Programs		Washington State Programs		
	BC PPP 2009\$	BC PPP 2011\$	SC LE 2011\$	KC BD 2011\$	KC GH 2011\$
<i>Actual cost \$ basis</i>					
Number of drop sites	942	1,033	28	12	12
Pounds collected	112,854	151,896	4,620	6,826	9,951
Total actual costs	\$350,827	\$516,800	\$51,135	\$13,846	\$38,452
Total actual costs, 2018\$	\$410,189	\$577,325	\$57,124	\$15,468	\$42,955
Cost per drop site	\$372.43	\$500.29	\$1,826.25	\$1,153.83	\$3,204.33
Cost per drop site, 2018\$	\$435.45	\$558.88	\$2,040.13	\$1,288.96	\$3,579.61
Cost per lb collected	\$3.63	\$3.80	\$12.36	\$2.27	\$4.32

How-to Guide for Drug Take-Back, Project Stewardship, NYPSC

Costs in Rural Drug Take-Back Pilot Program	Annual Cost 2016\$	Annual Cost 2018\$
Pharmacy #1, Oneida County NY	\$2,729	\$2,841
Pharmacy #2, Oneida County NY	\$2,729	\$2,841
Pharmacy #3, Lewis County NY	\$2,578	\$2,684
Pharmacy #4, Lewis County NY	\$2,578	\$2,684
Pharmacy #5 (Hospital), Lewis County NY	\$2,025	\$2,108

King County-wide Medicine Take-Back System Cost Estimate

# of drop sites	80
Estimated total cost, 2013\$	\$532,275
Estimated total cost, per drop site, 2013\$	\$6,653
Estimated total cost, per drop site, 2018\$	\$7,188

<https://undark.org/article/unused-medication-drug-take-back/>

For its part, Michigan OPEN, which began in October 2016, receives funding from state, federal, and University of Michigan sources for the take-back events it stages throughout the state in partnership with DEA-authorized entities — largely law enforcement agencies. Each take-back event costs approximately \$2,000, which Brummett says does not include drug disposal costs typically covered by either the DEA or local police.

The medical center, which purchases its kiosks from Stericycle and pays for all the costs — about \$2,000 per year per box, for each time drugs in a container are collected and destroyed — plans to install several more in other locations.

Cost of drug take back event, 2018\$

\$2,000

https://www.cleveland.com/cuyahoga-county/2018/04/dispose_of_unwanted_medications_april_28_on_national_prescription_drug_take_back_day.html

National results for the April 2017 National Take Back Day:

Total weight collected, pounds	900,386
Total collection sites	5,498
Avg pounds collected per site	164
Disposal cost per pound	\$1.50
Avg disposal cost per site	\$245.65

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APPENDIX D

Forensice FTE avg salary est.	\$73,970
Forensice FTEs	34

Cuyahoga, 2017 salaries (CUYAH_002426286)

Agency	Job Code	Hourly Rate	YTD Reg Hours	YTD Reg Earning	YTD OT Hours	YTD OT Earnings	YTD Other Earn	Term?	Title	FTE salary (2080 hrs/year)		FTE
										2017\$	2019\$	
Medical Examiner	7	46.53	2080	96709.6	0	0	764.92		ADMINISTRATOR	\$96,782	\$102,701	1.00
Medical Examiner	4	21.25	2080	44166.4	46.92	1474.55	0		ADMINISTRATOR ASST.	\$44,200	\$46,903	1.00
Medical Examiner	4	20.56	2021.25	41524.9	4.5	138.78	288.08		ADMINISTRATOR ASST.	\$42,765	\$45,380	0.97
Medical Examiner	100	20.81	2080	42554.44	79.71	2065.6	0		ARCHIVE MANAGER	\$43,285	\$45,932	1.00
Medical Examiner	6	27.17	2080	47276.8	0	0	358.4		BUSINESS ADMINISTRATOR	\$56,514	\$59,970	1.00
Medical Examiner	101	19.26	2080	40030.4	5.34	102.85	52.26		CASE MANAGER	\$40,061	\$42,511	1.00
Medical Examiner	101	17.62	2080	36621.6	0	0	0		CASE MANAGER	\$36,650	\$38,891	1.00
Medical Examiner	101	18.51	2080	38472	0	0	0		CASE MANAGER	\$38,501	\$40,855	1.00
Medical Examiner	102	26.47	2080	51967.22	27.72	707.14	5.2		CASE MANAGER - SUPV.	\$55,058	\$58,425	1.00
Medical Examiner	22	93.18	2080	193668	0	0	913.64		CHIEF DEP MED EXAMINER	\$193,814	\$205,668	1.00
Medical Examiner	17	27.97	2080	58133.6	0	0	0		CHIEF FORENSIC PHOTO.	\$58,178	\$61,736	1.00
Medical Examiner	136	38.43	2080	79874.4	0	0	295.36		CHIEF INVESTIGATOR	\$79,934	\$84,823	1.00
Medical Examiner	20	55.0487	1240	68174.09	0	0	8457.88 T		CHIEF TOXICOLOGIST	\$114,501	\$121,504	0.60
Medical Examiner	106	40.2	2080	83552.8	0	0	1514		DEP SUPERVISOR TRACE	\$83,616	\$88,730	1.00
Medical Examiner	24	22.21	2138	46779.3	63.52	1744.08	0		DESK ATTENDANT	\$46,197	\$49,022	1.03
Medical Examiner	108	63.12	2080	127744	0	0	1242.02		DIR PARENTAGE ID	\$131,290	\$139,319	1.00
Medical Examiner	23	25.16	2080	52293.6	69	1736.04	667		DRUG CHEMISTRY LAB SUP	\$52,333	\$55,533	1.00
Medical Examiner	28	16.82	2064	34690.08	30.92	763.22	0		EVIDENCE TECHNICIAN	\$34,986	\$37,125	0.99
Medical Examiner	145	27.35	2080	54506.4	0	0	259.22		EVIDENCE/FINGERPR TECH	\$56,888	\$60,367	1.00
Medical Examiner	33	39.1337	2080	81336.81	0	0	205.14		FINGERPRINT LAB SUPV.	\$81,398	\$86,376	1.00
Medical Examiner	150	43.36	2061	89296.96	0	0	707.46		FIREARMS TOOLMARK SUPV	\$90,189	\$95,705	0.99
Medical Examiner	112	45.28	2080	94111.2	262.5	11886	883.22		FORENSIC CHEMIST	\$94,182	\$99,942	1.00
Medical Examiner	114	25.17	2080	52314.4	0	0	1136.76		FORENSIC DNA ANALYST	\$52,354	\$55,555	1.00
Medical Examiner	34	87.2271	2080	181295.59	0	0	0		FORENSIC PATHOLOGIST 2	\$181,432	\$192,528	1.00
Medical Examiner	34	20.3	2080	42192	94.88	1992.04	0		FORENSIC PATHOLOGIST 2	\$42,224	\$44,806	1.00
Medical Examiner	34	76.02	2080	158002.4	0	0	6859.84		FORENSIC PATHOLOGIST 2	\$158,122	\$167,792	1.00
Medical Examiner	34	84.14	1662.25	139861.72	0	0	0		FORENSIC PATHOLOGIST 2	\$175,011	\$185,715	0.80
Medical Examiner	37	87.23	2080	181301.6	0	0	2322.06		FORENSIC PATHOLOGIST 3	\$181,438	\$192,535	1.00
Medical Examiner	46	25.16	2080	48958.52	125.25	3034.96	2799		FORENSIC SC 1 -DNA	\$52,333	\$55,533	1.00
Medical Examiner	46	23.7833	2080	48517.96	45.41	1079.99	2799		FORENSIC SC 1 -DNA	\$49,469	\$52,495	1.00
Medical Examiner	46	26.5	2080	55078.4	0	0	0		FORENSIC SC 1 -DNA	\$55,120	\$58,491	1.00
Medical Examiner	56	23.7864	2080	49438.35	0	0	0		FORENSIC SC 1 FR/TOOL	\$49,476	\$52,502	1.00
Medical Examiner	39	24.47	2080	50859.2	62	1517.14	0		FORENSIC SC 1 TOXICOL.	\$50,898	\$54,010	1.00
Medical Examiner	39	24.47	2080	50859.2	47.75	1168.44	0		FORENSIC SC 1 TOXICOL.	\$50,898	\$54,010	1.00
Medical Examiner	45	25.1775	2080	52329.7	73	1837.98	113.36		FORENSIC SC 2 DRUG CH	\$52,369	\$55,572	1.00
Medical Examiner	45	25.1775	2080	52329.7	139.75	3518.57	0		FORENSIC SC 2 DRUG CH	\$52,369	\$55,572	1.00
Medical Examiner	45	25.16	2080	52293.6	82	2063.12	0		FORENSIC SC 2 DRUG CH	\$52,333	\$55,533	1.00
Medical Examiner	54	30.32	720	21830.4	0	0	126.45		FORENSIC SC 2 -FIREARM	\$63,066	\$66,923	0.35
Medical Examiner	54	30.2	2080	62768.8	0	0	78		FORENSIC SC 2 -FIREARM	\$62,816	\$66,658	1.00
Medical Examiner	47	25.16	960	24114.4	0	0	2198.48 T		FORENSIC SC 2-DNA	\$52,333	\$55,533	0.46
Medical Examiner	47	25.16	544	13687.04	14.5	364.82	161		FORENSIC SC 2-DNA	\$52,333	\$55,533	0.26
Medical Examiner	47	25.17	2080	51346.94	37.33	939.61	2961		FORENSIC SC 2-DNA	\$52,354	\$55,555	1.00
Medical Examiner	47	25.17	2080	51346.94	134.09	3375.05	2961		FORENSIC SC 2-DNA	\$52,354	\$55,555	1.00
Medical Examiner	47	27.17	2080	55426.92	13.5	366.79	3203.72		FORENSIC SC 2-DNA	\$56,514	\$59,970	1.00
Medical Examiner	47	25.17	2080	51346.94	112.48	2831.12	2961		FORENSIC SC 2-DNA	\$52,354	\$55,555	1.00
Medical Examiner	68	30.2	2080	62768.8	0	0	829.66		FORENSIC SC 2-FINGER.	\$62,816	\$66,658	1.00
Medical Examiner	66	27.17	2080	56471.2	0	0	1066		FORENSIC SC 2-TRACE EV	\$56,514	\$59,970	1.00

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APPENDIX D

Cuyahoga, 2017 salaries (CUYAH_002426286)

Agency	Job Code	Hourly Rate	YTD Reg Hours	YTD Reg Earning	YTD OT Hours	YTD OT Earnings	YTD Other Earn	Term?	Title	FTE salary (2080 hrs/year)		FTE
										2017\$	2019\$	
Medical Examiner	66	25.17	2080	52314.4	0	0	987		FORENSIC SC 2-TRACE EV	\$52,354	\$55,555	1.00
Medical Examiner	44	31.88	2080	60805.6	64	2040.32	0		FORENSIC SC 3 TOXICOL.	\$66,310	\$70,366	1.00
Medical Examiner	44	32.46	1575	51088.66	0	0	0		FORENSIC SC 3 TOXICOL.	\$67,517	\$71,646	0.76
Medical Examiner	44	31.88	1922.25	61233.45	47	1498.36	86.32		FORENSIC SC 3 TOXICOL.	\$66,310	\$70,366	0.92
Medical Examiner	50	32.46	2080	66841.94	5	162.3	1272		FORENSIC SC 3-DNA	\$67,517	\$71,646	1.00
Medical Examiner	50	32.46	2080	65230.42	7	220.82	1638		FORENSIC SC 3-DNA	\$67,517	\$71,646	1.00
Medical Examiner	43	25.9	2076	53727.6	0	0	40.3		FORENSIC SC. 2 TOXICOL	\$53,872	\$57,167	1.00
Medical Examiner	43	25.17	1123.99	28251.63	0	0	0 T		FORENSIC SC. 2 TOXICOL	\$52,354	\$55,555	0.54
Medical Examiner	43	30.775	2080	63963.73	0	0	0		FORENSIC SC. 2 TOXICOL	\$64,012	\$67,927	1.00
Medical Examiner	158	23.79	2000	46677.6	0	0	1454.4		FORENSIC SCIENTIST 3	\$49,483	\$52,510	0.96
Medical Examiner	158	28.09	2090	58664.1	58.5	1643.27	227.5		FORENSIC SCIENTIST 3	\$58,427	\$62,001	1.00
Medical Examiner	5	26.99	2080	56096.8	0	0	0		HISTOLOGY TECHNICIAN	\$56,139	\$59,573	1.00
Medical Examiner	5	26.12	2080	53413.26	33.52	875.55	1119.82		HISTOLOGY TECHNICIAN	\$54,330	\$57,652	1.00
Medical Examiner	26	20.99	2087.92	43794.28	20	617.4	0		INVESTIGATOR I	\$43,659	\$46,329	1.00
Medical Examiner	26	20.99	2135.55	44785.83	36.94	1093.83	0		INVESTIGATOR I	\$43,659	\$46,329	1.03
Medical Examiner	26	21.6	2014	43469.64	58	1872.9	882.44		INVESTIGATOR I	\$44,928	\$47,676	0.97
Medical Examiner	26	27.88	2090	58227.4	146.4	5041.02	0		INVESTIGATOR I	\$57,990	\$61,537	1.00
Medical Examiner	26	26.6	1267.46	33674.9	0	0	11664.07 T		INVESTIGATOR I	\$55,328	\$58,712	0.61
Medical Examiner	26	20.99	2087	43774.97	73.3	2156.16	0		INVESTIGATOR I	\$43,659	\$46,329	1.00
Medical Examiner	26	21.6	2130	45967.68	30	972	0		INVESTIGATOR I	\$44,928	\$47,676	1.02
Medical Examiner	26	20.99	2118	44417.46	0	0	0		INVESTIGATOR I	\$43,659	\$46,329	1.02
Medical Examiner	26	20.99	1855.08	38938.13	45.34	1369.07	0		INVESTIGATOR I	\$43,659	\$46,329	0.89
Medical Examiner	26	23.7864	2138	50584.58	29.5	939.57	103.74		INVESTIGATOR I	\$49,476	\$52,502	1.03
Medical Examiner	26	18.51	2088	38260.2	99.52	2572.11	0		INVESTIGATOR I	\$38,501	\$40,855	1.00
Medical Examiner	27	24.59	2138	52527.34	30	1106.7	0		INVESTIGATOR II	\$51,147	\$54,275	1.03
Medical Examiner	27	27.88	2148	58898.9	62.38	2042.35	253.76		INVESTIGATOR II	\$57,990	\$61,537	1.03
Medical Examiner	27	23.79	2091.54	49720.14	75.48	2509.67	0		INVESTIGATOR II	\$49,483	\$52,510	1.01
Medical Examiner	69	20.81	2080	43252	199.83	4886.15	0		LABORATORY TECH TOX.	\$43,285	\$45,932	1.00
Medical Examiner	3	114.8	2080	238604	0	0	954.72		MEDICAL EXAMINER	\$238,784	\$253,388	1.00
Medical Examiner	62	18.85	2079	39159.55	0	0	737.88		MEDICAL SECY	\$39,208	\$41,606	1.00
Medical Examiner	62	18.52	2080	38492.8	0	0	0		MEDICAL SECY	\$38,522	\$40,878	1.00
Medical Examiner	72	28.47	2080	58617.06	26.35	847.45	224.9		MORGUE TECH SUPERVISOR	\$59,218	\$62,839	1.00
Medical Examiner	70	18.25	2128	38801.44	49.49	1277.53	147.94		MORGUE TECHNICIAN	\$37,960	\$40,282	1.02
Medical Examiner	70	18.85	2100	39556.14	60.5	1705.34	1878.76		MORGUE TECHNICIAN	\$39,208	\$41,606	1.01
Medical Examiner	74	37.03	2080	75453.92	43.67	1617.1	4823.58		PARENTAGE LAB SUPV.	\$77,022	\$81,733	1.00
Medical Examiner	124	35.0134	1080	37705.68	0	0	1726.96 T		PATHOLOGIST	\$72,828	\$77,282	0.52
Medical Examiner	124	38.4615	1008	38768.35	0	0	0		PATHOLOGIST	\$80,000	\$84,893	0.48
Medical Examiner	124	38.4616	1000	38461.62	0	0	0		PATHOLOGIST	\$80,000	\$84,893	0.48
Medical Examiner	41	28.63	2080	59505.6	414.38	14530.38	1248.78		PATHOLOGIST ASSISTANT	\$59,550	\$63,192	1.00
Medical Examiner	41	23.99	2080	49861.6	29.5	1061.71	34.58		PATHOLOGIST ASSISTANT	\$49,899	\$52,951	1.00
Medical Examiner	41	28.36	2080	58944	328.3	10743.32	288.08		PATHOLOGIST ASSISTANT	\$58,989	\$62,596	1.00
Medical Examiner	138	87.23	2080	181301.6	0	0	230.36		PATHOLOGIST/DIR EDUCAT	\$181,438	\$192,535	1.00
Medical Examiner	42	19.2471	2080	40003.83	15.42	443.11	0		PHOTOGRAPHER	\$40,034	\$42,482	1.00
Medical Examiner	42	18.72	1192	22314.24	0.5	9.36	0		PHOTOGRAPHER	\$38,938	\$41,319	0.57
Medical Examiner	75	24.28	2080	50464	0	0	213.72		PROGRAM OFFICER 1	\$50,502	\$53,591	1.00
Medical Examiner	103	35.4206	2064	73052.61	0	0	182.26		PROGRAM OFFICER 4	\$73,675	\$78,181	0.99
Medical Examiner	71	26.02	2080	54080.8	0	0	0		SECRETARY TO CORONER	\$54,122	\$57,432	1.00
Medical Examiner	139	55.06	2080	114438.4	0	0	1242.02		SUPV TRACE & DNA	\$114,525	\$121,529	1.00
Medical Examiner	134	31.21	2080	62336	357.51	13024.68	1617.19		SUPV. PATHOLOGIST ASST	\$64,917	\$68,887	1.00
Medical Examiner	104	50.15	2080	104233.6	162.73	8160.91	273.52		TOXICOLOGY LAB SUPV.	\$104,312	\$110,692	1.00

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APPENDIX D

FTE salary estimate \$73,632**Cuyahoga, 2017 salaries (CUYAH_002426286)**

Agency	Job Code	Hourly Rate	YTD Reg Hours	YTD Reg Earning	YTD OT Hours	YTD OT Earnings	YTD Other Earn	Term?	Title	2017\$	2019\$
Common Pleas Court	313	34.0068	2080	64962.75	0	0	1284.79		DRUG COURT COORDINATOR	\$70,734	\$75,060
Common Pleas Court	312	32.7126	2080	67580.47	0	0	1634.12		TASC MANAGER	\$68,042	\$72,204

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APPENDIX D

CPI-All Urban Consumers (Current Series)**Original Data Value**

Series Id: CUSR0000SA0
Seasonally Adjusted
Series Title: All items in U.S. city average, all urban consumers,
Area: U.S. city average
Item: All items
Base Period: 1982-84=100
Years: 2009 to 2019

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	HALF1	HALF2
2009	211.933	212.705	212.495	212.709	213.022	214.790	214.726	215.445	215.861	216.509	217.234	217.347		
2010	217.488	217.281	217.353	217.403	217.290	217.199	217.605	217.923	218.275	219.035	219.590	220.472		
2011	221.187	221.898	223.046	224.093	224.806	224.806	225.395	226.106	226.597	226.750	227.169	227.223		
2012	227.842	228.329	228.807	229.187	228.713	228.524	228.590	229.918	231.015	231.638	231.249	231.221		
2013	231.679	232.937	232.282	231.797	231.893	232.445	232.900	233.456	233.544	233.669	234.100	234.719		
2014	235.288	235.547	236.028	236.468	236.918	237.231	237.498	237.460	237.477	237.430	236.983	236.252		
2015	234.718	235.236	236.005	236.156	236.974	237.684	238.053	238.028	237.506	237.781	238.016	237.817		
2016	237.833	237.469	238.038	238.827	239.464	240.167	240.150	240.602	241.051	241.691	242.029	242.772		
2017	243.780	243.961	243.749	244.051	243.962	244.182	244.390	245.297	246.418	246.587	247.332	247.901		
2018	248.884	249.369	249.498	249.956	250.646	251.134	251.597	251.879	252.010	252.794	252.760	252.723		
2019	252.673	253.113												

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APPENDIX D

CPI-All Urban Consumers (Current Series)**Original Data Value**

Series Id: CUSR0000SEMF01
Seasonally Adjusted
Series Title: Prescription drugs in U.S. city average, all urban
Area: U.S. city average
Item: Prescription drugs
Base Period: 1982-84=100
Years: 2009 to 2019

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	HALF1	HALF2
2009	383.122	384.495	384.826	386.887	389.323	390.484	391.260	393.312	395.475	397.026	397.873	398.753		
2010	400.165	401.776	403.584	404.732	406.612	407.611	407.620	409.693	411.122	412.245	413.766	414.957		
2011	416.264	418.046	419.855	422.493	424.912	424.635	426.117	426.943	428.293	429.535	430.512	432.105		
2012	433.949	435.981	437.492	438.034	438.678	440.040	442.606	443.683	444.033	444.534	442.126	440.470		
2013	440.893	438.938	440.530	440.912	438.905	440.376	441.877	444.268	445.598	446.846	447.552	444.266		
2014	447.563	450.685	449.998	452.219	455.263	458.151	459.904	459.518	461.490	464.450	468.032	473.181		
2015	472.517	473.980	475.769	477.652	479.374	480.039	480.404	480.811	480.825	481.843	484.188	484.521		
2016	486.486	490.449	492.825	496.894	493.907	498.435	503.121	510.060	514.197	516.015	513.192	514.700		
2017	516.194	516.046	516.079	512.375	512.945	517.515	524.431	523.831	521.176	521.401	524.461	528.993		
2018	528.531	526.898	525.771	525.936	531.961	534.057	529.244	527.619	527.104	525.569	527.664	525.687		
2019	525.861	520.618												

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APPENDIX D

CPI-All Urban Consumers (Current Series)**Original Data Value**

Series Id: CUSR0000SAM2
Seasonally Adjusted
Series Title: Medical care services in U.S. city average, all urban
Area: U.S. city average
Item: Medical care services
Base Period: 1982-84=100
Years: 2009 to 2019

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	HALF1	HALF2
2009	391.333	392.266	393.285	394.700	395.999	396.799	398.036	398.919	399.902	400.792	402.295	403.156		
2010	404.972	406.672	408.261	409.253	409.547	410.740	410.809	411.794	414.592	415.287	415.730	416.718		
2011	417.162	418.808	419.386	420.691	421.789	422.609	424.055	425.162	426.035	428.187	430.120	431.576		
2012	432.797	433.088	434.468	436.191	437.844	440.922	442.625	443.047	444.433	445.120	446.157	447.508		
2013	448.525	449.885	451.519	451.305	450.850	453.246	454.064	456.679	457.968	457.801	457.634	458.658		
2014	459.825	460.879	462.471	463.308	464.149	464.649	465.125	465.546	466.296	467.008	468.507	469.971		
2015	470.173	469.339	471.354	475.149	475.920	475.219	475.918	475.881	477.418	481.283	482.989	483.612		
2016	485.410	487.548	488.124	489.754	492.320	493.108	495.430	499.972	500.501	500.839	501.879	502.554		
2017	502.988	504.133	504.504	504.662	504.597	505.492	506.687	508.260	509.175	510.437	510.091	510.784		
2018	513.121	513.163	515.178	515.952	516.163	517.999	518.264	517.800	519.302	520.374	522.201	524.300		
2019	525.683	525.591												

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APPENDIX D

Employment Cost Index (NAICS)**Original Data Value**

Series Id: CIS30100000000000I
Seasonally adjusted
Series Title: Total compensation for State and local government workers in All industries
Ownership: State and local government workers
Component: Total compensation
Occupation: All workers
Industry: All workers
Subcategory: All workers
Area: United States (National)
Periodicity: Index number
Years: 2008 to 2018

Year	Period	Estimate Value	Standard Error
2008	Qtr1	109.0	
2008	Qtr2	109.8	
2008	Qtr3	110.9	
2008	Qtr4	111.6	
2009	Qtr1	112.4	
2009	Qtr2	113.2	
2009	Qtr3	113.5	
2009	Qtr4	114.1	
2010	Qtr1	114.5	
2010	Qtr2	115.1	
2010	Qtr3	115.5	
2010	Qtr4	116.1	
2011	Qtr1	116.7	
2011	Qtr2	117.0	
2011	Qtr3	117.3	
2011	Qtr4	117.7	
2012	Qtr1	118.3	
2012	Qtr2	118.9	
2012	Qtr3	119.5	
2012	Qtr4	119.9	
2013	Qtr1	120.5	

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2013	Qtr2	121.0
2013	Qtr3	121.4
2013	Qtr4	122.2
2014	Qtr1	122.8
2014	Qtr2	123.5
2014	Qtr3	124.0
2014	Qtr4	124.8
2015	Qtr1	125.4
2015	Qtr2	126.2
2015	Qtr3	126.9
2015	Qtr4	127.8
2016	Qtr1	128.5
2016	Qtr2	129.2
2016	Qtr3	130.2
2016	Qtr4	131.0
2017	Qtr1	131.8
2017	Qtr2	132.5
2017	Qtr3	133.4
2017	Qtr4	134.3
2018	Qtr1	134.8
2018	Qtr2	135.7
2018	Qtr3	136.8
2018	Qtr4	137.9

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APPENDIX D

Employment Cost Index (NAICS)**Original Data Value**

Series Id: CIS20100000000000I
Seasonally adjusted
Series Title: Total compensation for Private industry workers in All industries and
Ownership: Private industry workers
Component: Total compensation
Occupation: All workers
Industry: All workers
Subcategory: All workers
Area: United States (National)
Periodicity: Index number
Years: 2008 to 2018

Year	Period	Estimate Value	Standard Error
2008	Qtr1	107.2	
2008	Qtr2	108.0	
2008	Qtr3	108.6	
2008	Qtr4	109.1	
2009	Qtr1	109.3	
2009	Qtr2	109.5	
2009	Qtr3	109.9	
2009	Qtr4	110.4	
2010	Qtr1	111.1	
2010	Qtr2	111.6	
2010	Qtr3	112.1	
2010	Qtr4	112.6	
2011	Qtr1	113.3	
2011	Qtr2	114.2	
2011	Qtr3	114.6	
2011	Qtr4	115.1	
2012	Qtr1	115.7	
2012	Qtr2	116.3	
2012	Qtr3	116.8	
2012	Qtr4	117.2	
2013	Qtr1	117.9	

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2013	Qtr2	118.5
2013	Qtr3	119.0
2013	Qtr4	119.6
2014	Qtr1	119.9
2014	Qtr2	120.9
2014	Qtr3	121.7
2014	Qtr4	122.3
2015	Qtr1	123.2
2015	Qtr2	123.2
2015	Qtr3	124.0
2015	Qtr4	124.6
2016	Qtr1	125.4
2016	Qtr2	126.1
2016	Qtr3	126.7
2016	Qtr4	127.3
2017	Qtr1	128.3
2017	Qtr2	129.0
2017	Qtr3	130.0
2017	Qtr4	130.6
2018	Qtr1	131.9
2018	Qtr2	132.7
2018	Qtr3	133.7
2018	Qtr4	134.5

Summary of Errata - Appendix D

<i>\$ in millions</i>	Annual Cost: Year 5 (2024)	15-Year Estimate: 2020-2034			Report Section	App D Table
		Low	Base	High		
<u>Cuyahoga</u>						
Special Populations: Child Welfare - Supplemental Report	\$17.6	\$288.6	\$288.6	\$288.6	VI.C.5	Table C.5
Special Populations: Child Welfare - Corrected	\$18.5	\$303.6	\$303.6	\$303.6	VI.C.5	Table C.5
Net Impact of Corrections	\$0.9	\$15.1	\$15.1	\$15.1		
Social Support Housing - Supplemental Report	\$4.8	\$77.0	\$77.0	\$77.0	VI.D.4	Table C.11
Social Support Housing - Corrected	\$3.7	\$59.0	\$59.0	\$59.0	VI.D.4	Table C.11
Net Impact of Corrections	(\$1.1)	(\$18.0)	(\$18.0)	(\$18.0)		
Abatement Cost, Total - Supplemental Report	\$312.2	\$4,516.6	\$5,015.2	\$5,513.7		
Abatement Cost, Total - After Corrections	\$312.0	\$4,513.7	\$5,012.2	\$5,510.7		
% Impact of Corrections	-0.1%	-0.1%	-0.1%	-0.1%		
<u>Summit</u>						
Special Populations: Child Welfare - Supplemental Report	\$13.2	\$216.8	\$216.8	\$216.8	VI.C.5	Table S.5
Special Populations: Child Welfare - Corrected	\$13.9	\$227.4	\$227.4	\$227.4	VI.C.5	Table S.5
Net Impact of Corrections	\$0.6	\$10.6	\$10.6	\$10.6		
Social Support Housing - Supplemental Report	\$1.5	\$24.0	\$24.0	\$24.0	VI.D.4	Table S.11
Social Support Housing - Corrected	\$1.1	\$17.9	\$17.9	\$17.9	VI.D.4	Table S.11
Net Impact of Corrections	(\$0.4)	(\$6.1)	(\$6.1)	(\$6.1)		
Abatement Cost, Total - Supplemental Report	\$137.4	\$1,996.9	\$2,213.2	\$2,429.4		
Abatement Cost, Total - After Corrections	\$137.7	\$2,001.4	\$2,217.7	\$2,434.0		
% Impact of Corrections	0.2%	0.2%	0.2%	0.2%		

Interviews and Meetings with Members of the Communities

Cuyahoga

Call with Dr. Thomas Gilson and Hugh Shannon of Cuyahoga Medical Examiner, June 22, 2018.

Call with Scott Osiecki of Cuyahoga Medical Examiner, June 26, 2018.

Call with Maggie Keenan of Cuyahoga County, June 27, 2019.

Meeting with Mark Majer of Cuyahoga County Juvenile Court, July 11, 2018.

Meeting with Molly Leckler of Cuyahoga County Drug Court, July 11, 2018.

Meeting with Cynthia Weiskittel of Cuyahoga County Division of Children and Family Services, July 11, 2018.

Meeting with Scott Osiecki of Cuyahoga Medical Examiner, July 11, 2018

Meeting with Maggie Keenan of Cuyahoga County, July 11, 2018

Meeting with Vince Caraffi of Cuyahoga County Board of Health, July 12, 2018.

Meeting with Dr. Thomas Gilson and Hugh Shannon of Cuyahoga Medical Examiner, July 12, 2018.

Call with Cynthia Weiskittel of Cuyahoga County Division of Children and Family Services, July 31, 2018.

Call with Dr. Theodore Parran of St. Vincent Charity Medical Center, July 31, 2018.

Call with David Merriman of Cuyahoga County Department of Health and Human Services, August 6, 2018.

Call with Cynthia Weiskittel of Cuyahoga County Division of Children and Family Services, January 2, 2019.

Call with Scott Osiecki of Cuyahoga Medical Examiner, January 4, 2019.

Call with Cynthia Weiskittel of Cuyahoga County Division of Children and Family Services, January 7, 2019.

Call with Scott Osiecki of Cuyahoga Medical Examiner, January 9, 2019.

Call with Dr. Theodore Parran of St. Vincent Charity Medical Center, January 14, 2019.

Summit

Call with G. Craig of Summit County Alcohol, Drug Addiction & Mental Health Services Board, July 3, 2018.

Call with S. Barker of Summit County Sheriff's Office, July 31, 2018.

Round-table Meeting with Representatives of the Summit County Community, July 11, 2018.

Call with D. Skoda of Summit County Public Health, January 4, 2019.

Call with L. Kohler of Summit County Medical Examiner, January 7, 2019.

Call with G. Craig, D. Smith, and J. Peveich of Summit County Alcohol, Drug Addiction & Mental Health Services Board, January 10, 2019.

Call with A. Davidson, J. Barnes, D. Kearns of Summit County Children Services Board, January 11, 2019.

Call with G. Craig, D. Smith, and J. Peveich of Summit County Alcohol, Drug Addiction & Mental Health Services Board, January 22, 2019.

Call with G. Craig, D. Smith, and J. Peveich of Summit County Alcohol, Drug Addiction & Mental Health Services Board, January 28, 2019.

Call with Dr. N. Labor of Summa Health, February 1, 2019.

Cleveland

Meeting with Nicole Carlton, Cleveland EMS, Commissioner, July 11, 2018.

Meeting with Gary Gingell, Cleveland Division of Police, Commander, Narcotics Unit, July 11, 2018.

Meeting with Anthony Luke, Cleveland Division of Fire, Acting Assistant Chief, July 11, 2018.

Meeting with Persis Sosiak, Cleveland Department of Public Health, Commissioner of Health, July 11, 2018.

Meeting with Gloria Langford, Cleveland Human Resources, Administrative Manager, July 11, 2018.

Meeting with Greg Cordek, Cleveland Office Budget and Management, Manager, July 11, 2018.

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Table C.0

ODU Population in Year 1, Cuyahoga County

[1]	ODU Rate	1.4%
[2]	Cuyahoga County population 12+, 2017	1,077,588
[3]	ODU population, Year 1	15,167
[4]	% ODU population receiving treatment	20.0%
[5]	ODU population receiving treatment, Year 1	3,033
[6]	MAT % of ODU treatment	33.3%
[7]	ODU population receiving MAT, Year 1	1,011

Sources and Notes:

[1]=0.77% ODU prevalence + 0.63% HUD prevalence. See Pitt AL, Humphreys K, and Brandeau ML (2018), Supplement at S4 and Table A. 0.63% HUD prevalence = 0.51% HUD after ODU prevalence / 80% of HUD individuals with ODU first.

[2]: National Center for Health Statistics, Bridged-Race Population Estimates, July 1st resident population age 12 or older, Cuyahoga County.

[3]=[1]*[2].

[4], [6]: Based on available data on treatment received by the population with ODU. See e.g., SAMHSA/HHS: An Update on the Opioid Crisis, March 14, 2018 at p. 2 ("Only 20% with ODU received specialty addiction treatment"); Emma Sandoe, Carrie E. Fry and Richard G. Frank, "Policy Levers That States Can Use to Improve Opioid Addiction Treatment and Address the Opioid Epidemic," Health Affairs, October 2, 2018 ("[F]ewer than 10 percent of those with an ODU receive MAT").

[5]=[3]*[4].

[7]=[5]*[6].

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Table S.0
ODU Population in Year 1, Summit County

[1]	ODU Rate	1.4%
[2]	Summit County population 12+, 2017	467,186
[3]	ODU population, Year 1	6,576
[4]	% ODU population receiving treatment	20.0%
[5]	ODU population receiving treatment, Year 1	1,315
[6]	MAT % of ODU treatment	33.3%
[7]	ODU population receiving MAT, Year 1	438

Sources and Notes:

[1]=0.77% ODU prevalence + 0.63% HUD prevalence. See Pitt AL, Humphreys K, and Brandeau ML (2018), Supplement at S4 and Table A. 0.63% HUD prevalence = 0.51% HUD after ODU prevalence / 80% of HUD individuals with ODU first.

[2]: National Center for Health Statistics, Bridged-Race Population Estimates, July 1st resident population age 12 or older, Summit County.

[3]=[1]*[2].

[4], [6]: Based on available data on treatment received by the population with ODU. See e.g., SAMHSA/HHS: An Update on the Opioid Crisis, March 14, 2018 at p. 2 ("Only 20% with ODU received specialty addiction treatment"); Emma Sandoe, Carrie E. Fry and Richard G. Frank, "Policy Levers That States Can Use to Improve Opioid Addiction Treatment and Address the Opioid Epidemic," Health Affairs, October 2, 2018 ("[F]ewer than 10 percent of those with an ODU receive MAT").

[5]=[3]*[4].

[7]=[5]*[6].

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Table I
Historical and Projected Inflation

	1/2009 to 12/2018 [A]	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
<i>Actual inflation:</i>																			
[1] Consumer price index, all items	19.2%	2.1%	1.9%																
[2] Consumer price index, prescription drugs	37.2%	2.8%	(0.6%)																
[3] Consumer price index, medical care services	34.0%	1.6%	2.6%																
[4] Employment cost index, private industry	23.1%	2.6%	3.0%																
[5] Employment cost index, state and local govt	22.7%	2.5%	2.7%																
<i>Projected inflation:</i>																			
[6] Consumer price index, all items				2.1%	2.6%	2.6%	2.5%	2.5%	2.4%	2.3%	2.3%	2.3%	2.3%	2.4%	2.4%	2.4%	2.4%	2.4%	2.4%
[7] Consumer price index, prescription drugs				4.1%	5.0%	5.0%	4.8%	4.8%	4.6%	4.4%	4.4%	4.4%	4.4%	4.6%	4.6%	4.6%	4.6%	4.6%	4.6%
[8] Consumer price index, medical care services				3.7%	4.6%	4.6%	4.4%	4.4%	4.2%	4.1%	4.1%	4.1%	4.1%	4.2%	4.2%	4.2%	4.2%	4.2%	4.2%
[9] Employment cost index, private industry				3.4%	3.6%	3.6%	3.4%	3.3%	3.2%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%
[10] Employment cost index, state and local govt				3.3%	3.5%	3.5%	3.3%	3.2%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%	3.1%

Sources and Notes:

[1]-[5]: Bureau of Labor Statistics. CPI series are for U.S. city average, all urban consumers, seasonally adjusted. ECI series are for total compensation, all industries and occupations.

[6], [9]: Congressional Budget Office, The Budget and Economic Outlook: 2019 to 2029. Table E-1.

[7]=[6]*([2A]/[1A]).

[8]=[6]*([3A]/[1A]).

[10]=[9]*([5A]/[4A]).

APPENDIX D: TREATMENT

CONFIDENTIAL**APPENDIX D****Table C.1****Estimated Cost of Treatment, Cuyahoga County**

		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15
		2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
<i>Projected population receiving treatment</i>																
[1]	Population receiving treatment, low case	3,033	4,045	5,056	6,067	6,067	6,067	5,842	5,617	5,393	5,168	4,943	4,719	4,494	4,269	4,045
[2]	Population receiving treatment, base case	3,033	4,045	5,056	6,067	6,067	6,067	6,067	6,067	6,067	6,067	6,067	6,067	6,067	6,067	6,067
[3]	Population receiving treatment, high case	3,033	4,045	5,056	6,067	6,067	6,067	6,292	6,516	6,741	6,966	7,190	7,415	7,640	7,864	8,089
<i>Estimated cost of treatment</i>																
		<i>2019\$ [A]</i>														
[4]	Average cost of treatment provided	\$24,023 / person	\$25,126	\$26,279	\$27,439	\$28,650	\$29,864	\$31,077	\$32,339	\$33,652	\$35,018	\$36,502	\$38,048	\$39,660	\$41,341	\$44,918
<i>Specialized facility for families</i>																
		<i>2019\$ [B]</i>														
[5]	# of residential units required	75														
[6]	Housing cost per unit	\$10,032														
[7]	Childcare cost per unit	\$9,541														
[8]	Resident costs (\$000s)	\$1,468														
[9]	Other operating costs (\$000s)	\$1,165														
[10]	Cost of facility (\$000s)	\$2,633	\$2,702	\$2,772	\$2,841	\$2,912	\$2,982	\$3,051	\$3,121	\$3,193	\$3,266	\$3,345	\$3,425	\$3,507	\$3,591	\$3,678
<i>Total cost of treatment</i>																
		<i>2020-2034 [C]</i>														
[11]	Low case (\$000s)	\$2,595,019	\$78,920	\$109,060	\$141,565	\$176,728	\$184,163	\$191,588	\$192,047	\$192,228	\$192,109	\$191,987	\$191,510	\$190,650	\$189,374	\$187,649
[12]	Base case (\$000s)	\$3,003,359	\$78,920	\$109,060	\$141,565	\$176,728	\$184,163	\$191,588	\$199,313	\$207,351	\$215,714	\$224,794	\$234,257	\$244,120	\$254,398	\$265,111
[13]	High case (\$000s)	\$3,411,700	\$78,920	\$109,060	\$141,565	\$176,728	\$184,163	\$191,588	\$206,580	\$222,474	\$239,320	\$257,601	\$277,004	\$297,589	\$319,422	\$342,573

Sources and Notes:

See Table I for actual and projected inflation rates used.

[A]: Cost estimated based on Dr. Parran's description of treatment needs (Parran Report at pp. 127, 136-137) and a study of the economic costs of substance abuse treatments (Alexandre PK, Beulaygue IC, French MT et al. (2012)).

[C]=Σ(Year 1 to Year 15).

[1]-[3]: Year 1 from Table C.0[5]. Projects that the number of individuals receiving treatment doubles by Year 4. Base case projects the number of individuals receiving treatment remains constant thereafter. Low case projects that the number of individuals receiving treatment will decline by 1/3 from Year 5 to Year 15. High case projects that the number of individuals receiving treatment will increase by 1/3 from Year 5 to Year 15.

[4]: Estimated cost based on [A] and medical care services inflation.

[5]: Double the capacity of Miracle Village, which was a 30-unit apartment building for mothers receiving intensive treatment.

[6]: Based on HUD fair market rent in 2019 for a 2-bedroom residence in Cuyahoga County.

[7]: Average cost of infant childcare in Ohio, as reported by the Economic Policy Institute.

[8]=[5]*([6]+[7])/10³.

[9]: Based on the (inflation-adjusted) expenditures of Tarry House, a program in Summit County that provided residential recovery/treatment, respite housing, supported housing and community psychiatric and supportive treatment (CPST) and counseling services to nearly 250 different people in 2017.

[10]: [10B]=[8]+[9]. Year 1 onward grown at projected inflation.

[11]=([1]*[4])/10³+ [10].

[12]=([2]*[4])/10³+ [10].

[13]=([3]*[4])/10³+ [10].

CONFIDENTIAL**APPENDIX D****Table S.1****Estimated Cost of Treatment, Summit County**

		Year 1 2020	Year 2 2021	Year 3 2022	Year 4 2023	Year 5 2024	Year 6 2025	Year 7 2026	Year 8 2027	Year 9 2028	Year 10 2029	Year 11 2030	Year 12 2031	Year 13 2032	Year 14 2033	Year 15 2034
<i>Projected population receiving treatment</i>																
[1]	Population receiving treatment, low case	1,315	1,754	2,192	2,630	2,630	2,630	2,533	2,435	2,338	2,241	2,143	2,046	1,948	1,851	1,754
[2]	Population receiving treatment, base case	1,315	1,754	2,192	2,630	2,630	2,630	2,630	2,630	2,630	2,630	2,630	2,630	2,630	2,630	2,630
[3]	Population receiving treatment, high case	1,315	1,754	2,192	2,630	2,630	2,630	2,728	2,825	2,923	3,020	3,117	3,215	3,312	3,410	3,507
<i>Estimated cost of treatment</i>																
		<i>2019\$ [A]</i>														
[4]	Average cost of treatment provided	\$24,023 / person	\$25,126	\$26,279	\$27,439	\$28,650	\$29,864	\$31,077	\$32,339	\$33,652	\$35,018	\$36,502	\$38,048	\$39,660	\$41,341	\$44,918
<i>Specialized facility for families</i>		<i>2019\$ [B]</i>														
[5]	# of residential units required	30														
[6]	Housing cost per unit	\$9,720														
[7]	Childcare cost per unit	\$9,541														
[8]	Resident costs (\$000s)	\$578														
[9]	Other operating costs (\$000s)	\$1,165														
[10]	Cost of facility (\$000s)	\$1,743	\$1,789	\$1,835	\$1,881	\$1,928	\$1,974	\$2,020	\$2,066	\$2,114	\$2,162	\$2,214	\$2,267	\$2,322	\$2,377	\$2,493
<i>Total cost of treatment</i>		<i>2020-2034 [C]</i>														
[11]	Low case (\$000s)	\$1,136,064	\$34,833	\$47,916	\$62,024	\$77,285	\$80,525	\$83,759	\$83,975	\$84,070	\$84,035	\$84,000	\$83,811	\$83,457	\$82,923	\$81,257
[12]	Base case (\$000s)	\$1,313,100	\$34,833	\$47,916	\$62,024	\$77,285	\$80,525	\$83,759	\$87,125	\$90,626	\$94,269	\$98,223	\$102,344	\$106,639	\$111,114	\$115,778
[13]	High case (\$000s)	\$1,490,135	\$34,833	\$47,916	\$62,024	\$77,285	\$80,525	\$83,759	\$90,275	\$97,183	\$104,503	\$112,447	\$120,877	\$129,820	\$139,305	\$149,362

Sources and Notes:

See Table I for actual and projected inflation rates used.

[A]: Cost estimated based on Dr. Parran's description of treatment needs (Parran Report at pp. 127, 136-137) and a study of the economic costs of substance abuse treatments (Alexandre PK, Beulaygue IC, French MT et al. (2012)).

[C]=Σ(Year 1 to Year 15).

[1]-[3]: Year 1 from Table S.0[5]. Projects that the number of individuals receiving treatment doubles by Year 4. Base case projects the number of individuals receiving treatment remains constant thereafter. Low case projects that the number of individuals receiving treatment will decline by 1/3 from Year 5 to Year 15. High case projects that the number of individuals receiving treatment will increase by 1/3 from Year 5 to Year 15.

[4]: Estimated cost based on [A] and medical care services inflation.

[5]: Based on the capacity of Miracle Village, which was a 30-unit apartment building for mothers receiving intensive treatment.

[6]: Based on HUD fair market rent in 2019 for a 2-bedroom residence in Summit County.

[7]: Average cost of infant childcare in Ohio, as reported by the Economic Policy Institute.

[8]=[5]*([6]+[7])/10^3.

[9]: Based on the (inflation-adjusted) expenditures of Tarry House, a program in Summit County that provided residential recovery/treatment, respite housing, supported housing and community psychiatric and supportive treatment (CPST) and counseling services to nearly 250 different people in 2017.

[10]: [10B]=[8]+[9]. Year 1 onward grown at projected inflation.

[11]=([1]*[4])/10^3+[10].

[12]=([2]*[4])/10^3+[10].

[13]=([3]*[4])/10^3+[10].

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Table C.2
Estimated Cost of MAT, Cuyahoga County

		Year 1 2020	Year 2 2021	Year 3 2022	Year 4 2023	Year 5 2024	Year 6 2025	Year 7 2026	Year 8 2027	Year 9 2028	Year 10 2029	Year 11 2030	Year 12 2031	Year 13 2032	Year 14 2033	Year 15 2034
[1]	MAT % of population receiving treatment	33.3%	44.4%	55.6%	66.7%	66.7%	66.7%	66.7%	66.7%	66.7%	66.7%	66.7%	66.7%	66.7%	66.7%	66.7%
<i>Projected population receiving MAT</i>																
[2]	Population receiving MAT, low case	1,011	1,798	2,809	4,045	4,045	4,045	3,895	3,745	3,595	3,445	3,296	3,146	2,996	2,846	2,696
[3]	Population receiving MAT, base case	1,011	1,798	2,809	4,045	4,045	4,045	4,045	4,045	4,045	4,045	4,045	4,045	4,045	4,045	4,045
[4]	Population receiving MAT, high case	1,011	1,798	2,809	4,045	4,045	4,045	4,194	4,344	4,494	4,644	4,794	4,943	5,093	5,243	5,393
<i>Estimated cost of MAT</i>																
<i>2019\$ [A]</i>																
[5]	Buprenorphine	\$122 / week	\$6,675	\$7,011	\$7,350	\$7,705	\$8,062	\$8,421	\$8,795	\$9,186	\$9,595	\$10,040	\$10,506	\$10,993	\$11,504	\$12,037
[6]	Methadone	\$134 / week	\$7,314	\$7,681	\$8,053	\$8,442	\$8,833	\$9,226	\$9,637	\$10,065	\$10,513	\$11,000	\$11,511	\$12,045	\$12,604	\$13,189
[7]	Naltrexone (VIVITROL®)	\$1,251 / month	\$15,766	\$16,558	\$17,359	\$18,198	\$19,042	\$19,889	\$20,773	\$21,697	\$22,662	\$11,620	\$11,429	\$10,883	\$11,388	\$11,797
[8]	Average annual cost of MAT		\$7,935	\$8,416	\$8,909	\$9,430	\$9,962	\$10,503	\$10,971	\$11,458	\$11,968	\$10,709	\$11,097	\$11,450	\$11,981	\$12,519
<i>Allocation of MAT</i>																
<i>% of MAT [B]</i>																
[9]	Buprenorphine	35.0%	35.0%	36.0%	37.0%	38.0%	39.0%	40.0%	40.0%	40.0%	40.0%	40.0%	40.0%	40.0%	40.0%	40.0%
[10]	Methadone	55.0%	55.0%	53.0%	51.0%	49.0%	47.0%	45.0%	45.0%	45.0%	45.0%	45.0%	45.0%	45.0%	45.0%	45.0%
[11]	Naltrexone (VIVITROL®)	10.0%	10.0%	11.0%	12.0%	13.0%	14.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%
<i>Total cost of MAT</i>																
<i>2020-2034 [C]</i>																
[12]	Low case (\$000s)	\$513,592	\$8,024	\$15,129	\$25,023	\$38,140	\$40,291	\$42,482	\$42,727	\$42,911	\$43,026	\$36,897	\$36,570	\$36,019	\$35,896	\$34,824
[13]	Base case (\$000s)	\$594,044	\$8,024	\$15,129	\$25,023	\$38,140	\$40,291	\$42,482	\$44,371	\$46,344	\$48,405	\$43,314	\$44,881	\$46,310	\$48,459	\$50,636
[14]	High case (\$000s)	\$674,497	\$8,024	\$15,129	\$25,023	\$38,140	\$40,291	\$42,482	\$46,014	\$49,777	\$53,783	\$49,730	\$53,192	\$56,602	\$61,023	\$65,639

Sources and Notes:

See Table I for actual and projected inflation rates used.

[A]: U.S. DOD, Office of the Secretary. 32 CFR Part 199. TRICARE; Mental Health and Substance Use Disorder Treatment. Federal Register, Vol. 81, No. 171, 61068-61098. Adjusted for prescription drug price inflation.

[B]: OhioMHAS estimates that the breakdown of MAT received by clients in Ohio's opioid-treatment programs (OTPs) is 74.2% methadone, 21.5% buprenorphine, and 4.3% naltrexone. This estimate is adjusted to reflect buprenorphine and naltrexone provided via non-OTP treatment facilities, based on data from the National Survey of Substance Abuse Treatment Services, 2017.

[C]=Σ(Year 1 to Year 15).

[1]: Projects that the prevalence of MAT among individuals receiving treatment will double by Year 4 and remain constant thereafter.

[2]=[1]*Table C.1[1].

[3]=[1]*Table C.1[2].

[4]=[1]*Table C.1[3].

[5]-[7]: Annual cost of treatment based on [B] and projected prescription drug price inflation. Naltrexone price drops in 2029 when the drug goes off-patent based on generic pricing trends reported by IMS.

[8]=[5]*[9]+[6]*[10]+[7]*[11].

[9]-[11]: Projects that buprenorphine and naltrexone allocation will increase gradually through Year 6 as the # of PCPs providing MAT increases.

[12]=([2]*[8])/10^3.

[13]=([3]*[8])/10^3.

[14]=([4]*[8])/10^3.

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Table S.2
Estimated Cost of MAT, Summit County

		Year 1 2020	Year 2 2021	Year 3 2022	Year 4 2023	Year 5 2024	Year 6 2025	Year 7 2026	Year 8 2027	Year 9 2028	Year 10 2029	Year 11 2030	Year 12 2031	Year 13 2032	Year 14 2033	Year 15 2034
[1]	MAT % of population receiving treatment	33.3%	44.4%	55.6%	66.7%	66.7%	66.7%	66.7%	66.7%	66.7%	66.7%	66.7%	66.7%	66.7%	66.7%	66.7%
<i>Projected population receiving MAT</i>																
[2]	Population receiving MAT, low case	438	779	1,218	1,754	1,754	1,754	1,689	1,624	1,559	1,494	1,429	1,364	1,299	1,234	1,169
[3]	Population receiving MAT, base case	438	779	1,218	1,754	1,754	1,754	1,754	1,754	1,754	1,754	1,754	1,754	1,754	1,754	1,754
[4]	Population receiving MAT, high case	438	779	1,218	1,754	1,754	1,754	1,818	1,883	1,948	2,013	2,078	2,143	2,208	2,273	2,338
<i>Estimated cost of MAT</i>																
<i>2019\$ [A]</i>																
[5]	Buprenorphine	\$122 / week	\$6,675	\$7,011	\$7,350	\$7,705	\$8,062	\$8,421	\$8,795	\$9,186	\$9,595	\$10,040	\$10,506	\$10,993	\$11,504	\$12,037
[6]	Methadone	\$134 / week	\$7,314	\$7,681	\$8,053	\$8,442	\$8,833	\$9,226	\$9,637	\$10,065	\$10,513	\$11,000	\$11,511	\$12,045	\$12,604	\$13,189
[7]	Naltrexone (VIVITROL®)	\$1,251 / month	\$15,766	\$16,558	\$17,359	\$18,198	\$19,042	\$19,889	\$20,773	\$21,697	\$22,662	\$11,620	\$11,429	\$10,883	\$11,388	\$11,797
[8]	Average annual cost of MAT		\$7,935	\$8,416	\$8,909	\$9,430	\$9,962	\$10,503	\$10,971	\$11,458	\$11,968	\$10,709	\$11,097	\$11,450	\$11,981	\$12,519
<i>Allocation of MAT</i>																
<i>% of MAT [B]</i>																
[9]	Buprenorphine	35.0%	35.0%	36.0%	37.0%	38.0%	39.0%	40.0%	40.0%	40.0%	40.0%	40.0%	40.0%	40.0%	40.0%	40.0%
[10]	Methadone	55.0%	55.0%	53.0%	51.0%	49.0%	47.0%	45.0%	45.0%	45.0%	45.0%	45.0%	45.0%	45.0%	45.0%	45.0%
[11]	Naltrexone (VIVITROL®)	10.0%	10.0%	11.0%	12.0%	13.0%	14.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%
<i>Total cost of MAT</i>																
<i>2020-2034 [C]</i>																
[12]	Low case (\$000s)	\$222,667	\$3,479	\$6,559	\$10,849	\$16,535	\$17,468	\$18,418	\$18,524	\$18,604	\$18,654	\$15,997	\$15,855	\$15,616	\$15,563	\$15,448
[13]	Base case (\$000s)	\$257,547	\$3,479	\$6,559	\$10,849	\$16,535	\$17,468	\$18,418	\$19,237	\$20,092	\$20,986	\$18,779	\$19,458	\$20,078	\$21,009	\$21,953
[14]	High case (\$000s)	\$292,427	\$3,479	\$6,559	\$10,849	\$16,535	\$17,468	\$18,418	\$19,949	\$21,581	\$23,318	\$21,561	\$23,061	\$24,540	\$26,456	\$30,196

Sources and Notes:

See Table I for actual and projected inflation rates used.

[A]: U.S. DOD, Office of the Secretary. 32 CFR Part 199. TRICARE; Mental Health and Substance Use Disorder Treatment. Federal Register, Vol. 81, No. 171, 61068-61098. Adjusted for prescription drug price inflation.

[B]: OhioMHAS estimates that the breakdown of MAT received by clients in Ohio's opioid-treatment programs (OTPs) is 74.2% methadone, 21.5% buprenorphine, and 4.3% naltrexone. This estimate is adjusted to reflect buprenorphine and naltrexone provided via non-OTP treatment facilities, based on data from the National Survey of Substance Abuse Treatment Services, 2017.

[C]=Σ(Year 1 to Year 15).

[1]: Projects that the prevalence of MAT among individuals receiving treatment will double by Year 4 and remain constant thereafter.

[2]=[1]*Table S.1[1].

[3]=[1]*Table S.1[2].

[4]=[1]*Table S.1[3].

[5]-[7]: Annual cost of treatment based on [B] and projected prescription drug price inflation. Naltrexone price drops in 2029 when the drug goes off-patent based on generic pricing trends reported by IMS.

[8]=[5]*[9]+[6]*[10]+[7]*[11].

[9]-[11]: Projects that buprenorphine and naltrexone allocation will increase gradually through Year 6 as the # of PCPs providing MAT increases.

[12]=([2]*[8])/10^3.

[13]=([3]*[8])/10^3.

[14]=([4]*[8])/10^3.

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Table C.3

Estimated Cost of Recruiting PCPS to Provide MAT, Cuyahoga County

		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15
		2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
	<i>Recruitment staffing requirements</i>	<i>2019\$ [A]</i>														
[1]	FTEs to recruit PCPs to provide MAT	4														
[2]	FTE salary estimate	\$66,000														
[3]	Salary cost (\$000s)	\$264	\$273	\$283	\$293	\$302	\$312	\$321	\$331	\$341	\$351	\$362	\$373	\$384	\$396	\$421

Sources and Notes:

See Table I for actual and projected inflation rates used.

[B]: Multiplier intended to capture labor costs beyond salary, such as fringe benefits and office costs.

[C]=Σ(Year 1 to Year 15).

[2]: Salary estimated based on Cuyahoga County salary data for comparable employee types. CUYAH_002426286.

[3]: [3A]=([1]*[2])/10^3. Year 1 onwards grown at projected employment cost inflation.

[4]=[3]*[B].

[5]=[4].

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Table S.3

Estimated Cost of Recruiting PCPS to Provide MAT, Summit County

		Year 1 2020	Year 2 2021	Year 3 2022	Year 4 2023	Year 5 2024	Year 6 2025	Year 7 2026	Year 8 2027	Year 9 2028	Year 10 2029	Year 11 2030	Year 12 2031	Year 13 2032	Year 14 2033	Year 15 2034
	<i>Recruitment staffing requirements</i>	<i>2019\$ [A]</i>														
[1]	FTEs to recruit PCPs to provide MAT	2														
[2]	FTE salary estimate	\$66,000														
[3]	Salary cost (\$000s)	\$132	\$137	\$142	\$146	\$151	\$156	\$161	\$165	\$170	\$176	\$181	\$187	\$192	\$198	\$204
	<i>Estimated employment cost</i>	<i>Labor Cost Multiplier [B]</i>														
[4]	FTE employment cost, base case (\$000s)	1.75x	\$239	\$248	\$256	\$264	\$273	\$281	\$289	\$298	\$307	\$317	\$326	\$336	\$347	\$357
	<i>Total cost of recruitment</i>	<i>2020-2034 [C]</i>														
[5]	Base case (\$000s)	\$4,507	\$239	\$248	\$256	\$264	\$273	\$281	\$289	\$298	\$307	\$317	\$326	\$336	\$347	\$357

Sources and Notes:

See Table I for actual and projected inflation rates used.

[B]: Multiplier intended to capture labor costs beyond salary, such as fringe benefits and office costs.

[C]=Σ(Year 1 to Year 15).

[2]=Table C.3[2].

[3]: [3A]=([1]*[2])/10^3. Year 1 onwards grown at projected employment cost inflation.

[4]=[3]*[B].

[5]=[4].

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Table C.4

Estimated Cost of Connecting Individuals to Services, Cuyahoga County

		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	
		2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	
	<i>Staff 24-7 referral hotline</i>	<i>2019\$ [A]</i>															
[1]	Operators required for 24-7 hotline	8															
[2]	FTE salary estimate	\$35,500															
[3]	Salary cost (\$000s)	\$284	\$294	\$304	\$315	\$325	\$335	\$345	\$356	\$367	\$378	\$389	\$401	\$414	\$426	\$439	\$453
	<i>Staff emergency departments</i>	<i>2019\$ [B]</i>															
[4]	Total social workers required	22															
[5]	FTE salary estimate	\$62,000															
[6]	Salary cost (\$000s)	\$1,364	\$1,412	\$1,462	\$1,511	\$1,560	\$1,609	\$1,659	\$1,709	\$1,761	\$1,815	\$1,870	\$1,927	\$1,986	\$2,047	\$2,109	\$2,174
[7]	Estimated opioid-related visits	8,908															
[8]	Recovery coach utilization %	20.0%															
[9]	Visits utilizing recovery coach	1,782															
[10]	Recovery coach hours per client, avg	18															
[11]	Recovery coach hourly rate	\$15.00															
[12]	Salary cost (\$000)	\$481	\$498	\$516	\$533	\$550	\$568	\$585	\$603	\$621	\$640	\$660	\$680	\$700	\$722	\$744	\$767
	<i>Labor Cost</i>																
	<i>Estimated employment cost</i>	<i>Multiplier [C]</i>															
[13]	FTE employment cost, base case (\$000s)	1.75x	\$3,858	\$3,994	\$4,128	\$4,262	\$4,396	\$4,530	\$4,669	\$4,811	\$4,958	\$5,109	\$5,265	\$5,425	\$5,591	\$5,762	\$5,937
	<i>Individuals receiving transportation assistance</i>																
[14]	Individuals transported to treatment, low case		758	1,011	1,264	1,517	1,517	1,517	1,461	1,404	1,348	1,292	1,236	1,180	1,123	1,067	1,011
[15]	Individuals transported to treatment, base case		758	1,011	1,264	1,517	1,517	1,517	1,517	1,517	1,517	1,517	1,517	1,517	1,517	1,517	1,517
[16]	Individuals transported to treatment, high case		758	1,011	1,264	1,517	1,517	1,517	1,573	1,629	1,685	1,741	1,798	1,854	1,910	1,966	2,022
	<i>Estimated transportation cost</i>	<i>2019\$ [D]</i>															
[17]	Round trip fare, avg	\$21.00															
[18]	# of round trips per individual per year, avg	36															
[19]	Annual transportation cost per individual, avg	\$756	\$776	\$796	\$816	\$836	\$856	\$876	\$896	\$917	\$938	\$960	\$983	\$1,007	\$1,031	\$1,056	\$1,081
[20]	Cost of transportation, low case (\$000s)		\$588	\$805	\$1,031	\$1,268	\$1,299	\$1,328	\$1,309	\$1,287	\$1,264	\$1,241	\$1,215	\$1,188	\$1,158	\$1,127	\$1,093
[21]	Cost of transportation, base case (\$000s)		\$588	\$805	\$1,031	\$1,268	\$1,299	\$1,328	\$1,359	\$1,390	\$1,422	\$1,456	\$1,491	\$1,527	\$1,564	\$1,601	\$1,640
[22]	Cost of transportation, high case (\$000s)		\$588	\$805	\$1,031	\$1,268	\$1,299	\$1,328	\$1,409	\$1,493	\$1,580	\$1,672	\$1,767	\$1,866	\$1,969	\$2,076	\$2,186
	<i>Web-based referral system</i>	<i>2019\$ [E]</i>															
[23]	Cost of web-based system (000s)	\$112	\$115	\$118	\$121	\$124	\$127	\$130	\$133	\$136	\$139	\$143	\$146	\$150	\$153	\$157	\$161
	<i>Total cost of connecting individuals</i>	<i>2020-2034 [F]</i>															
[24]	Low case (\$000s)	\$91,951	\$4,561	\$4,917	\$5,280	\$5,654	\$5,822	\$5,989	\$6,110	\$6,234	\$6,361	\$6,492	\$6,626	\$6,763	\$6,902	\$7,045	\$7,191
[25]	Base case (\$000s)	\$94,520	\$4,561	\$4,917	\$5,280	\$5,654	\$5,822	\$5,989	\$6,161	\$6,337	\$6,519	\$6,708	\$6,902	\$7,102	\$7,308	\$7,520	\$7,738
[26]	High case (\$000s)	\$97,089	\$4,561	\$4,917	\$5,280	\$5,654	\$5,822	\$5,989	\$6,211	\$6,440	\$6,677	\$6,924	\$7,178	\$7,442	\$7,713	\$7,994	\$8,284

CONFIDENTIAL**APPENDIX D****Table C.4****Estimated Cost of Connecting Individuals to Services, Cuyahoga County**

Sources and Notes:

See Table I for actual and projected inflation rates used.

[C]: Multiplier intended to capture labor costs beyond salary, such as fringe benefits and office costs.

[F]=Σ(Year 1 to Year 15).

[1]=(24 hours*365 days)/(2,080 work hours per operator)*2 operators staffed at all times (rounded).

[2]: Salary estimated based on Cuyahoga County salary data for comparable employee types. CUYAH_002426286.

[3]: [3A]=([1]*[2])/10³. Year 1 onwards grown at projected employment cost inflation.

[4]: Assumes on average of one social worker required per hospital. The Ohio Development Services Agency reports that there are 22 registered hospital in Cuyahoga County.

[5]: Salary estimated based on average salary of medical social workers in Cleveland reported by Salary.com.

[6]: [6B]=([4]*[5])/10³. Year 1 onwards grown at projected employment cost inflation.

[7]=524 opioid overdose deaths in Cuyahoga County in 2017 * 17 emergency room visits per overdose death. National Center for Health Statistics and Parran Report at ¶72.

[8]=Table C.0[4].

[9]=[7]*[8].

[10]: Assumes that recovery coaches will work on average 18 hours per client.

[11]: Hourly rate based on hourly rate ranges for recovery coaches reported by Glassdoor.

[12]=([9]*[10]*[11])/10³.

[13]=([3]+[6]+[12])*[C].

[14]-[16]: 25% of Table C.1[1]-[3].

[17]: Based on reported Uber fare rates in Cleveland. Estimated as the average of the minimum fare for a round trip, the fare for a 14 mile round trip, and the fare for a 30 mile round trip. Distances based on average and median distance traveled to OTPs reported in Rosenblum, Cleland, Kayman et al. (2011).

[19]: [19D]=[17]*[18]. Year 1 onwards grown at projected inflation.

[20]=([14]*[19])/10³.

[21]=([15]*[19])/10³.

[22]=([16]*[19])/10³.

[23]: [23E] based on cost of findlocaltreatment.com quoted for Franklin County. Year 1 onwards grown at projected inflation.

[24]=[13]+[20]+[23].

[25]=[13]+[21]+[23].

[26]=[13]+[22]+[23].

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Table S.4

Estimated Cost of Connecting Individuals to Services, Summit County

		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	
		2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	
	<i>Staff 24-7 referral hotline</i>	<i>2019\$ [A]</i>															
[1]	Operators required for 24-7 hotline	8															
[2]	FTE salary estimate	\$35,500															
[3]	Salary cost (\$000s)	\$284	\$294	\$304	\$315	\$325	\$335	\$345	\$356	\$367	\$378	\$389	\$401	\$414	\$426	\$439	\$453
	<i>Staff emergency departments</i>	<i>2019\$ [B]</i>															
[4]	Total social workers required	10															
[5]	FTE salary estimate	\$59,500															
[6]	Salary cost (\$000s)	\$595	\$616	\$638	\$659	\$681	\$702	\$723	\$746	\$768	\$792	\$816	\$841	\$866	\$893	\$920	\$948
[7]	Estimated opioid-related visits	3,230															
[8]	Recovery coach utilization %	20.0%															
[9]	Visits utilizing recovery coach	646															
[10]	Recovery coach hours per client, avg	18															
[11]	Recovery coach hourly rate	\$15.00															
[12]	Salary cost (\$000)	\$174	\$181	\$187	\$193	\$200	\$206	\$212	\$219	\$225	\$232	\$239	\$246	\$254	\$262	\$270	\$278
	<i>Labor Cost</i>																
	<i>Estimated employment cost</i>	<i>Multiplier [C]</i>															
[13]	FTE employment cost, base case (\$000s)	1.75x	\$1,909	\$1,976	\$2,043	\$2,109	\$2,175	\$2,242	\$2,310	\$2,380	\$2,453	\$2,528	\$2,605	\$2,684	\$2,766	\$2,851	\$2,938
	<i>Individuals receiving transportation assistance</i>																
[14]	Individuals transported to treatment, low case		329	438	548	658	658	658	633	609	585	560	536	511	487	463	438
[15]	Individuals transported to treatment, base case		329	438	548	658	658	658	658	658	658	658	658	658	658	658	658
[16]	Individuals transported to treatment, high case		329	438	548	658	658	658	682	706	731	755	779	804	828	852	877
	<i>Estimated transportation cost</i>	<i>2019\$ [D]</i>															
[17]	Round trip fare, avg	\$22.00															
[18]	# of round trips per individual per year, avg	36															
[19]	Annual transportation cost per individual, avg	\$792	\$813	\$834	\$855	\$876	\$897	\$918	\$939	\$960	\$982	\$1,006	\$1,030	\$1,055	\$1,080	\$1,106	\$1,133
[20]	Cost of transportation, low case (\$000s)		\$267	\$365	\$468	\$576	\$590	\$603	\$594	\$585	\$574	\$563	\$552	\$539	\$526	\$512	\$496
[21]	Cost of transportation, base case (\$000s)		\$267	\$365	\$468	\$576	\$590	\$603	\$617	\$631	\$646	\$661	\$677	\$694	\$710	\$727	\$745
[22]	Cost of transportation, high case (\$000s)		\$267	\$365	\$468	\$576	\$590	\$603	\$640	\$678	\$718	\$759	\$803	\$848	\$894	\$943	\$993
	<i>Web-based referral system</i>	<i>2019\$ [E]</i>															
[23]	Cost of web-based system (000s)	\$112	\$115	\$118	\$121	\$124	\$127	\$130	\$133	\$136	\$139	\$143	\$146	\$150	\$153	\$157	\$161
	<i>Total cost of connecting individuals</i>	<i>2020-2034 [F]</i>															
[24]	Low case (\$000s)	\$45,835	\$2,291	\$2,460	\$2,632	\$2,809	\$2,892	\$2,975	\$3,037	\$3,101	\$3,167	\$3,234	\$3,303	\$3,374	\$3,446	\$3,519	\$3,595
[25]	Base case (\$000s)	\$47,002	\$2,291	\$2,460	\$2,632	\$2,809	\$2,892	\$2,975	\$3,060	\$3,148	\$3,238	\$3,332	\$3,428	\$3,528	\$3,630	\$3,735	\$3,843
[26]	High case (\$000s)	\$48,169	\$2,291	\$2,460	\$2,632	\$2,809	\$2,892	\$2,975	\$3,083	\$3,195	\$3,310	\$3,430	\$3,554	\$3,682	\$3,814	\$3,950	\$4,091

CONFIDENTIAL**APPENDIX D****Table S.4****Estimated Cost of Connecting Individuals to Services, Summit County**

Sources and Notes:

See Table I for actual and projected inflation rates used.

[C]: Multiplier intended to capture labor costs beyond salary, such as fringe benefits and office costs.

[F]=Σ(Year 1 to Year 15).

[1]=(24 hours*365 days)/(2,080 work hours per operator)*2 operators staffed at all times (rounded).

[2]=Table C.4[2].

[3]: [3A]=([1]*[2])/10³. Year 1 onwards grown at projected employment cost inflation.

[4]: Assumes on average of one new social worker per hospital. The Ohio Development Services Agency reports that there are 10 registered hospital in Summit County.

[5]: Salary estimated based on average salary of medical social workers in Akron reported by Salary.com.

[6]: [6B]=([4]*[5])/10³. Year 1 onwards grown at projected employment cost inflation.

[7]=190 opioid overdose deaths in Summit County in 2017 * 17 emergency room visits per overdose death. National Center for Health Statistics and Parran Report at ¶72.

[8]: Assumes that 1 in 4 opioid-related emergency department visitors will accept assistance from a recovery coach.

[9]=[7]*[8].

[10]: Assumes that recovery coaches will work on average 18 hours with each client.

[11]: Hourly rate based on hourly rate ranges for recovery coaches reported by Glassdoor.

[12]=([9]*[10]*[11])/10³.

[13]=([3]+[6]+[12])*[C].

[14]-[16]: 25% of Table S.1[1]-[3].

[17]: Based on reported Uber fares. Estimated as the average of the minimum fare for a round trip, the fare for a 14 mile round trip, and the fare for a 30 mile round trip. Distances based on average and median distance traveled to OTP reported in Rosenblum, Cleland, Kayman et al. (2011).

[19]: [19D]=[17]*[18]. Year 1 onwards grown at projected inflation.

[20]=([14]*[19])/10³.

[21]=([15]*[19])/10³.

[22]=([16]*[19])/10³.

[23]: [23E] based on cost of findlocaltreatment.com quoted for Franklin County. Year 1 onwards grown at projected inflation.

[24]=[13]+[20]+[23].

[25]=[13]+[21]+[23].

[26]=[13]+[22]+[23].

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Table C.5

Estimated Cost of Special Populations: Child Welfare, Cuyahoga County

		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15
		2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
	<i>Child welfare agency staffing</i>	<i>2019\$ [A]</i>														
[1]	Investigation, active cases	2,303														
[2]	Ongoing, active cases	1,911														
[3]	Adoption and other, active cases	557														
[4]	Subtotal, active cases	4,771														
[5]	Social worker, investigation caseload	12														
[6]	Social worker, ongoing caseload	10														
[7]	Social worker, perm. support caseload	20														
[8]	Family advocate, ongoing caseload	10														
[9]	Opioid-related %	15.7%														
[10]	Required # of social workers	80														
[11]	FTE salary estimate	\$52,500														
[12]	Salary cost (\$000s)	\$4,200	\$4,349	\$4,503	\$4,653	\$4,805	\$4,956	\$5,107	\$5,263	\$5,423	\$5,589	\$5,759	\$5,935	\$6,116	\$6,303	\$6,495
[13]	Required # of family advocates	30														
[14]	FTE salary estimate	\$38,500														
[15]	Salary cost (\$000s)	\$1,155	\$1,196	\$1,238	\$1,280	\$1,321	\$1,363	\$1,404	\$1,447	\$1,491	\$1,537	\$1,584	\$1,632	\$1,682	\$1,733	\$1,786
[16]	Trauma counselor for CFS staff	1														
[17]	FTE salary estimate	\$61,500														
[18]	Salary cost (\$000s)	\$62	\$64	\$66	\$68	\$70	\$73	\$75	\$77	\$79	\$82	\$84	\$87	\$90	\$92	\$95
[19]	Staff to recruit foster families	3														
[20]	FTE salary estimate	\$52,500														
[21]	Salary cost (\$000s)	\$158	\$163	\$169	\$175	\$180	\$186	\$192	\$197	\$203	\$210	\$216	\$223	\$229	\$236	\$244
	<i>Labor Cost</i>															
	<i>Estimated employment cost</i>	<i>Multiplier [B]</i>														
[22]	FTE employment cost, base case (\$000s)	1.75x	\$10,100	\$10,458	\$10,808	\$11,159	\$11,510	\$11,861	\$12,223	\$12,596	\$12,980	\$13,376	\$13,784	\$14,204	\$14,638	\$15,084
	<i>Cost of out-of-home placements</i>	<i>2019\$ [C]</i>														
[23]	Children placed in foster/instl care, avg #	1,454														
[24]	Opioid-related % of removals	15.7%														
[25]	Est. cost per placement, avg	\$17,492														
[26]	Estimated placement cost (\$000s)	\$3,999	\$4,103	\$4,210	\$4,315	\$4,423	\$4,529	\$4,633	\$4,740	\$4,849	\$4,960	\$5,079	\$5,201	\$5,326	\$5,454	\$5,585
	<i>Child care for at-risk families</i>	<i>2019\$ [D]</i>														
[27]	Minors receiving in-home services, avg #	2,775														
[28]	Opioid-related %	15.7%														
[29]	% receiving day care services	33.0%														
[30]	Annual childcare cost	\$9,541														
[31]	Childcare cost (\$000)	\$1,373	\$1,408	\$1,445	\$1,481	\$1,518	\$1,555	\$1,590	\$1,627	\$1,664	\$1,703	\$1,743	\$1,785	\$1,828	\$1,872	\$1,917
	<i>Total cost for special population</i>	<i>2020-2034 [E]</i>														
[32]	Base case (\$000s)	\$288,551	\$15,612	\$16,113	\$16,604	\$17,100	\$17,594	\$18,085	\$18,590	\$19,109	\$19,643	\$20,199	\$20,771	\$21,359	\$21,964	\$22,586

CONFIDENTIAL**APPENDIX D****Table C.5****Estimated Cost of Special Populations: Child Welfare, Cuyahoga County**

Sources and Notes:

See Table I for actual and projected inflation rates used.

[B]: Multiplier intended to capture labor costs beyond salary, such as fringe benefits and office costs.

[E]=Σ(Year 1 to Year 15).

[1]-[4], [23], [27]: Cuyahoga County Division of Children and Family Services, 2018 Statistical Report: January - September 2018 at pp. 5-7.

[5]-[7]: Deposition of Cynthia G. Weiskittel, November 13, 2018, at 88:19-22; 91:15-16; and 92:8-13.

[8]: Assumed to be approximately equal to [6].

[9], [28]: Assumed equal to [24].

[10]=[9]*([1]/[5]+[2]/[6]+([2]+[3])/[7]) (rounded).

[11], [14], [17], [20]: Salary estimated based on Cuyahoga County salary data for comparable employee types. CUYAH_002426286.

[12]=([10]*[11])/10³. Year 1 onwards grown at projected employment cost inflation.

[13]=[9]*([2]/[8]) (rounded).

[15]=([13]*[14])/10³. Year 1 onwards grown at projected employment cost inflation.

[18]=([16]*[17])/10³. Year 1 onwards grown at projected employment cost inflation.

[21]=([19]*[20])/10³. Year 1 onwards grown at projected employment cost inflation.

[22]=([12]+[15]+[18]+[21])*[B].

[24]: 2017 opioid-related % of removals for Cuyahoga Children and Family Services, see Cutler Report, Table III.6[1].

[25]: Estimated based on boarding and care costs and placements for foster care and institutional housing in 2017.

[26]: [26C]=([23]*[24]*[25])/10³. Year 1 onwards grown at projected inflation.

[29]: % of minor population (<18) that is under 6-years old. National Center for Health Statistics, Bridged-Race Population Estimates, Cuyahoga County.

[30]=Table C.1[7].

[31]: [31D]=([27]*[28]*[29]*[30])/10³. Year 1 onwards grown at projected inflation.

[32]=[22]+[26]+[31].

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Table S.5

Estimated Cost of Special Populations: Child Welfare, Summit County

		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15
		2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
	<i>Child welfare agency staffing</i>	<i>2019\$ [A]</i>														
[1]	Investigation, active cases	1,007														
[2]	Ongoing, active cases	836														
[3]	Adoption and other, active cases	244														
[4]	Subtotal, active cases	2,087														
[5]	Social worker, investigation caseload	12														
[6]	Social worker, ongoing caseload	10														
[7]	Social worker, perm. support caseload	20														
[8]	Family advocate, ongoing caseload	10														
[9]	Opioid-related %	27.0%														
[10]	Required # of social workers	60														
[11]	FTE salary estimate	\$52,500														
[12]	Salary cost (\$000s)	\$3,150	\$3,262	\$3,377	\$3,490	\$3,603	\$3,717	\$3,830	\$3,947	\$4,068	\$4,192	\$4,319	\$4,451	\$4,587	\$4,727	\$5,020
[13]	Required # of family advocates	23														
[14]	FTE salary estimate	\$38,500														
[15]	Salary cost (\$000s)	\$886	\$917	\$949	\$981	\$1,013	\$1,045	\$1,077	\$1,110	\$1,143	\$1,178	\$1,214	\$1,251	\$1,289	\$1,329	\$1,411
[16]	Trauma counselor for CFS staff	1														
[17]	FTE salary estimate	\$61,500														
[18]	Salary cost (\$000s)	\$62	\$64	\$66	\$68	\$70	\$73	\$75	\$77	\$79	\$82	\$84	\$87	\$90	\$92	\$98
[19]	Staff to recruit foster families	2														
[20]	FTE salary estimate	\$52,500														
[21]	Salary cost (\$000s)	\$105	\$109	\$113	\$116	\$120	\$124	\$128	\$132	\$136	\$140	\$144	\$148	\$153	\$158	\$167
	<i>Labor Cost</i>															
	<i>Estimated employment cost</i>	<i>Multiplier [B]</i>														
[22]	FTE employment cost, base case (\$000s)	1.75x	\$7,614	\$7,884	\$8,147	\$8,412	\$8,677	\$8,942	\$9,214	\$9,495	\$9,785	\$10,084	\$10,391	\$10,708	\$11,035	\$11,371
	<i>Cost of out-of-home placements</i>	<i>2019\$ [C]</i>														
[23]	Children placed in foster/instl care, avg #	636														
[24]	Opioid-related % of removals	27.0%														
[25]	Est. cost per placement, avg	\$17,492														
[26]	Estimated placement cost (\$000s)	\$3,006	\$3,084	\$3,164	\$3,244	\$3,325	\$3,404	\$3,483	\$3,563	\$3,645	\$3,729	\$3,818	\$3,910	\$4,004	\$4,100	\$4,299
	<i>Child care for at-risk families</i>	<i>2019\$ [D]</i>														
[27]	Minors receiving in-home services, avg #	1,213														
[28]	Opioid-related %	27.0%														
[29]	% receiving day care services	32.1%														
[30]	Annual childcare cost	\$9,541														
[31]	Childcare cost (\$000)	\$1,004	\$1,030	\$1,057	\$1,083	\$1,110	\$1,137	\$1,163	\$1,190	\$1,217	\$1,245	\$1,275	\$1,306	\$1,337	\$1,369	\$1,435
	<i>Total cost for special population</i>	<i>2020-2034 [E]</i>														
[32]	Base case (\$000s)	\$216,801	\$11,728	\$12,105	\$12,474	\$12,847	\$13,218	\$13,587	\$13,967	\$14,357	\$14,759	\$15,177	\$15,606	\$16,049	\$16,503	\$17,452

CONFIDENTIAL**APPENDIX D****Table S.5****Estimated Cost of Special Populations: Child Welfare, Summit County**

Sources and Notes:

See Table I for actual and projected inflation rates used.

[B]: Multiplier intended to capture labor costs beyond salary, such as fringe benefits and office costs.

[E]=Σ(Year 1 to Year 15).

[1]-[4], [23], [27]: Based on figure in Table C 5, adjusted downward based on the difference in the size of the minor population in Summit County relative to Cuyahoga County.

[5]-[7]: Assumed equal to caseload figures in Table C.5.

[8]: Assumed to be approximately equal to [6].

[9], [28]: Assumed equal to [24].

[10]=[9]*([1]/[5]+[2]/[6]+([2]+[3])/[7]) (rounded).

[11], [14], [17], [20]: Assumed equal to salary estimate figures in Table C.5.

[12]=([10]*[11])/10³. Year 1 onwards grown at projected employment cost inflation.

[13]=[9]*([2]/[8]) (rounded).

[15]=([13]*[14])/10³. Year 1 onwards grown at projected employment cost inflation.

[18]=([16]*[17])/10³. Year 1 onwards grown at projected employment cost inflation.

[21]=([19]*[20])/10³. Year 1 onwards grown at projected employment cost inflation.

[22]=([12]+[15]+[18]+[21])*[B].

[24]: 2017 opioid-related % of removals for Summit Children Services Board, see Cutler Report, Table III.6[2].

[25]=Table C.5[25].

[26]: [26C]=([23]*[24]*[25])/10³. Year 1 onwards grown at projected inflation.

[29]: % of minor population (<18) that is under 6-years old. National Center for Health Statistics, Bridged-Race Population Estimates, Summit County.

[30]=Table S.1[7].

[31]: [31D]=([27]*[28]*[29]*[30])/10³. Year 1 onwards grown at projected inflation.

[32]=[22]+[26]+[31].

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Table C.6

Estimated Cost of Special Populations: Pregnant Women, Cuyahoga County

			Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15
			2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
	<i>Home visit program</i>	<i>2019[A]</i>															
[1]	# of opioid-related NAS cases	137															
[2]	Pregnant women with OUD	183															
[3]	Cost per home visit family	\$7,467															
[4]	Cost of home visit program (\$000s)	\$1,366	\$1,429	\$1,495	\$1,561	\$1,630	\$1,699	\$1,768	\$1,839	\$1,914	\$1,992	\$2,076	\$2,164	\$2,256	\$2,351	\$2,451	\$2,555
	<i>Total cost for special population</i>	<i>2020-2034 [B]</i>															
[5]	Base case (\$000s)	\$29,180	\$1,429	\$1,495	\$1,561	\$1,630	\$1,699	\$1,768	\$1,839	\$1,914	\$1,992	\$2,076	\$2,164	\$2,256	\$2,351	\$2,451	\$2,555

Sources and Notes:

See Table I for actual and projected inflation rates used.

[B]=Σ(Year 1 to Year 15).

[1]: McGuire Public Nuisance Report, Appendix E.

[2]=[1]/75% (rounded). 75% based on Keyes Report at p. 25: "Withdrawal symptoms develop in an estimated 55-95% of opioid-exposed infants".

[3]: Based on average cost of Nurse-Family Partnership (NFP) program per family, as reported by HHS Administration for Children & Families.

[4]=([2]*[3])/10³. Year 1 onwards grown at projected medical services inflation.

[5]=[4].

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Table S.6

Estimated Cost of Special Populations: Pregnant Women, Summit County

			Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15
			2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
	<i>Home visit program</i>	<i>2019[A]</i>															
[1]	# of opioid-related NAS cases	71															
[2]	Pregnant women with OUD	95															
[3]	Cost per home-visit family	<i>\$7,467</i>															
[4]	Cost of home visit program (\$000s)	\$709	\$742	\$776	\$810	\$846	\$882	\$918	\$955	\$994	\$1,034	\$1,078	\$1,123	\$1,171	\$1,221	\$1,272	\$1,326
	<i>Total cost for special population</i>	<i>2020-2034 [B]</i>															
[5]	Base case (\$000s)	\$15,148	\$742	\$776	\$810	\$846	\$882	\$918	\$955	\$994	\$1,034	\$1,078	\$1,123	\$1,171	\$1,221	\$1,272	\$1,326

Sources and Notes:

See Table I for actual and projected inflation rates used.

[B]=Σ(Year 1 to Year 15).

[1]: McGuire Public Nuisance Report, Appendix E.

[2]=[1]/75% (rounded). 75% based on Keyes Report at p. 25: "Withdrawal symptoms develop in an estimated 55-95% of opioid-exposed infants".

[3]: Based on average cost of Nurse-Family Partnership (NFP) program per family, as reported by HHS Administration for Children & Families.

[4]=([2]*[3])/10^3. Year 1 onwards grown at projected medical services inflation.

[5]=[4].

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Table C.7

Estimated Cost of Special Populations: Jails, Cuyahoga County

		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	
		2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	
	<u>Comprehensive treatment & re-entry facility</u>	<u>2019\$ [A]</u>															
[1]	Average daily population	2,263															
[2]	% of inmates with OUD	25.0%															
[3]	% of OUD inmates housed in facility	66.7%															
[4]	Average daily population with OUD	377															
[5]	Estimated facility cost per bed per day	\$33.48															
[6]	Cost of facility (\$000s)	\$4,606	\$4,726	\$4,849	\$4,970	\$5,094	\$5,217	\$5,337	\$5,459	\$5,585	\$5,714	\$5,851	\$5,991	\$6,135	\$6,282	\$6,433	\$6,587
	<u>Connect inmates with OUD to resources</u>	<u>2019\$ [B]</u>															
[7]	Annual # of releases	27,381															
[8]	Annual # of releases, inmates with OUD	6,845															
[9]	Daily releases with OUD, avg	19															
[10]	Daily releases with OUD per social worker, avg	2															
[11]	Required social workers for OUD inmates	9															
[12]	FTE salary estimate	\$60,500															
[13]	Salary cost (\$000s)	\$545	\$564	\$584	\$603	\$623	\$642	\$662	\$682	\$703	\$725	\$747	\$769	\$793	\$817	\$842	\$868
	<u>Labor Cost</u>																
	<u>Estimated employment cost</u>	<u>Multiplier [C]</u>															
[14]	FTE employment cost, base case (\$000s)	1.75x	\$987	\$1,022	\$1,056	\$1,090	\$1,124	\$1,159	\$1,194	\$1,230	\$1,268	\$1,307	\$1,346	\$1,388	\$1,430	\$1,474	\$1,518
	<u>Transitional housing for inmates with OUD</u>	<u>2019\$ [D]</u>															
[15]	Annual # of releases, inmates with OUD	6,845															
[16]	% receiving transitional housing	20.0%															
[17]	Annual # receiving housing	1,369															
[18]	Avg # of days in transitional housing	90															
[19]	Daily cost of transitional housing	\$47															
[20]	Housing cost (\$000s)	\$5,806	\$5,957	\$6,112	\$6,264	\$6,421	\$6,575	\$6,726	\$6,881	\$7,039	\$7,201	\$7,374	\$7,551	\$7,732	\$7,918	\$8,108	\$8,302
	<u>Specialty detox and treatment unit</u>	<u>2019\$ [E]</u>															
[21]	Annual cost of specialty detox unit (\$000s)	\$712	\$731	\$750	\$768	\$788	\$806	\$825	\$844	\$863	\$883	\$904	\$926	\$948	\$971	\$994	\$1,018
	<u>Total cost for special population</u>	<u>2020-2034 [F]</u>															
[22]	Base case (\$000s)	\$222,005	\$12,400	\$12,732	\$13,059	\$13,393	\$13,723	\$14,047	\$14,378	\$14,718	\$15,066	\$15,436	\$15,815	\$16,203	\$16,601	\$17,009	\$17,426

CONFIDENTIAL**APPENDIX D****Table C.7****Estimated Cost of Special Populations: Jails, Cuyahoga County****Sources and Notes:**

See Table I for actual and projected inflation rates used.

[C]: Multiplier intended to capture labor costs beyond salary, such as fringe benefits and office costs.

[F]=Σ(Year 1 to Year 15).

[1], [6]: Cuyahoga County Sheriff's Department, 2017 Annual Report at p. 6.

[2]: From 2016 to 2018, between 24.7% and 29.6% of Common Pleas Court defendants had OUD (CUYAH_003505168-169).

[3]: Assumes that 2/3 of inmates with OUD are placed in comprehensive treatment and re-entry facility.

[4]=[1]*[2]*[3].

[5]: Estimated based on reported costs for the 175-bed comprehensive program center at Euclid Jail (CUYAH_012341077).

[6]: [6A]=([4]*[5]*365)/10³. Year 1 onwards grown at projected inflation.

[8]=[7]*[2].

[9]=[8]/365 days.

[11]=[9]/[10].

[12]: Salary estimated based on Cuyahoga County salary data for comparable employee types. (CUYAH_002426286)

[13]=([11]*[12])/10³. Year 1 onwards grown at employment cost inflation.

[14]=[13]*[C].

[15]=[8].

[17]=[15]*[16].

[18]: A 2017 data analysis prepared for the Ohio Development Services Agency and Ohio Mental Health and Addiction Services concluded that the optimal length of stay in transitional housing was 90 days.

[19]: Estimated based on 2019 fair market rents published by HUD and HUD research finding that transitional housing for individuals is ~211% of fair market rent for a 1-bedroom rental unit.

[20]: [20D]=([17]*[18]*[19])/10³. Year 1 onwards grown at projected inflation.

[21]: Estimated based on the inflation-adjusted annual cost of the Louisville Metro Corrections detox unit program. Year 1 onward grown at projected inflation.

[22]=[6]+[14]+[20]+[21].

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Table S.7

Estimated Cost of Special Populations: Jails, Summit County

		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	
		2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	
	<u>Comprehensive treatment & re-entry facility</u>	<u>2019\$ [A]</u>															
[1]	Average daily population	647															
[2]	% of inmates with OUD	25.0%															
[3]	% of OUD inmates housed in facility	100.0%															
[4]	Average daily population with OUD	162															
[5]	Estimated facility cost per bed per day	\$33.48															
[6]	Cost of facility (\$000s)	\$1,976	\$2,028	\$2,080	\$2,132	\$2,186	\$2,238	\$2,290	\$2,342	\$2,396	\$2,451	\$2,510	\$2,570	\$2,632	\$2,695	\$2,760	\$2,826
	<u>Connect inmates with OUD to resources</u>	<u>2019\$ [B]</u>															
[7]	Annual # of releases	11,199															
[8]	Annual # of releases, inmates with OUD	2,800															
[9]	Daily releases with OUD, avg	8															
[10]	Daily releases with OUD per social worker, avg	2															
[11]	Required social workers for OUD inmates	4															
[12]	FTE salary estimate	\$60,500															
[13]	Salary cost (\$000s)	\$232	\$240	\$249	\$257	\$265	\$274	\$282	\$291	\$300	\$309	\$318	\$328	\$338	\$348	\$359	\$370
	<u>Estimated employment cost</u>	<u>Labor Cost Multiplier [C]</u>															
[14]	FTE employment cost, base case (\$000s)	1.75x	\$420	\$435	\$450	\$465	\$479	\$494	\$509	\$524	\$540	\$557	\$574	\$591	\$609	\$628	\$647
	<u>Transitional housing for inmates with OUD</u>	<u>2019\$ [D]</u>															
[15]	Annual # of releases, inmates with OUD	2,800															
[16]	% receiving transitional housing	20.0%															
[17]	Annual # receiving housing	560															
[18]	Avg # of days in transitional housing	90															
[19]	Daily cost of transitional housing	\$43															
[20]	Housing cost (\$000s)	\$2,182	\$2,239	\$2,297	\$2,354	\$2,413	\$2,471	\$2,528	\$2,586	\$2,646	\$2,706	\$2,771	\$2,838	\$2,906	\$2,976	\$3,047	\$3,120
	<u>Total cost for special population</u>	<u>2020-2034 [E]</u>															
[21]	Base case (\$000s)	\$83,960	\$4,687	\$4,813	\$4,937	\$5,063	\$5,188	\$5,311	\$5,437	\$5,566	\$5,698	\$5,838	\$5,982	\$6,129	\$6,280	\$6,435	\$6,594

CONFIDENTIAL**APPENDIX D****Table S.7****Estimated Cost of Special Populations: Jails, Summit County**

Sources and Notes:

See Table I for actual and projected inflation rates used.

[C]: Multiplier intended to capture labor costs beyond salary, such as fringe benefits and office costs.

[E]= Σ (Year 1 to Year 15).

[1], [6]: Summit County Sheriff's Office, 2017 Annual Report at p. 49.

[2]=Table C.7[2].

[3]: Assumes that all inmates with OUD are placed in a comprehensive treatment and re-entry facility.

[4]=[1]*[2]*[3].

[5]=Table C.7[5].

[6]: $[6A]=([4]*[5]*365)/10^3$. Year 1 onwards grown at projected inflation.

[8]=[7]*[2].

[9]=[8]/365 days.

[11]=[9]/[10].

[12]=Table C.7[12].

[13]=([11]*[12])/10³. Year 1 onwards grown at employment cost inflation.

[14]=[13]*[C].

[15]=[8].

[17]=[15]*[16].

[18]: A 2017 data analysis prepared for the Ohio Development Services Agency and Ohio Mental Health and Addiction Services concluded that the optimal length of stay in transitional housing was 90 days.

[19]: Estimated based on 2019 fair market rents published by HUD and HUD research finding that transitional housing for individuals is ~211% of fair market rent for a 1-bedroom rental unit.

[20]: $[20D]=([17]*[18]*[19])/10^3$. Year 1 onwards grown at projected inflation.

[21]=[6]+[14]+[20].

APPENDIX D: HARM REDUCTION

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Table C.8

Estimated Cost of Naloxone, Cuyahoga County

		Year 1 2020	Year 2 2021	Year 3 2022	Year 4 2023	Year 5 2024	Year 6 2025	Year 7 2026	Year 8 2027	Year 9 2028	Year 10 2029	Year 11 2030	Year 12 2031	Year 13 2032	Year 14 2033	Year 15 2034
<i>Projected population requiring Narcan kits</i>																
[1]	Population requiring Narcan kits, low case	15,167	15,059	14,950	14,842	14,734	14,625	14,517	14,409	14,300	14,192	14,084	13,975	13,867	13,759	13,650
[2]	Population requiring Narcan kits, base case	15,167	15,167	15,167	15,167	15,167	15,167	15,167	15,167	15,167	15,167	15,167	15,167	15,167	15,167	15,167
[3]	Population requiring Narcan kits, high case	15,167	15,275	15,384	15,492	15,600	15,709	15,817	15,925	16,034	16,142	16,250	16,359	16,467	16,575	16,684
<i>Estimated cost of Narcan kits</i>																
		<i>2019\$ [A]</i>														
[4]	Wholesale price \$111 / kit	\$116	\$122	\$128	\$134	\$140	\$147	\$153	\$160	\$167	\$175	\$183	\$191	\$200	\$209	\$219
[5]	Average # per person per year	1.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
[6]	Average cost per person per year	\$116	\$244	\$256	\$268	\$281	\$293	\$306	\$320	\$334	\$349	\$366	\$383	\$400	\$419	\$438
<i>Salary cost of distributing kits</i>																
		<i>2019\$ [B]</i>														
[7]	Distribution program administrators 2															
[8]	Estimated FTE salary \$55,500															
[9]	Salary cost (\$000)	\$111	\$115	\$119	\$123	\$127	\$131	\$135	\$139	\$143	\$148	\$152	\$157	\$162	\$167	\$172
<i>Labor Cost</i>																
		<i>Multiplier [C]</i>														
[10]	FTE employment cost, base case (\$000s) 1.75x	\$201	\$208	\$215	\$222	\$229	\$236	\$243	\$251	\$258	\$266	\$274	\$283	\$291	\$300	\$310
<i>Total cost of Narcan kits</i>																
		<i>2020-2034 [D]</i>														
[11]	Low case (\$000s)	\$72,021	\$1,963	\$3,882	\$4,039	\$4,201	\$4,363	\$4,522	\$4,686	\$4,857	\$5,033	\$5,225	\$5,423	\$5,629	\$5,842	\$6,064
[12]	Base case (\$000s)	\$76,169	\$1,963	\$3,908	\$4,094	\$4,289	\$4,484	\$4,681	\$4,885	\$5,099	\$5,322	\$5,565	\$5,819	\$6,085	\$6,363	\$6,653
[13]	High case (\$000s)	\$80,317	\$1,963	\$3,935	\$4,150	\$4,376	\$4,606	\$4,839	\$5,084	\$5,342	\$5,612	\$5,906	\$6,215	\$6,541	\$6,883	\$7,243
<i>Naloxone for first responders</i>																
		<i>2019\$ [E]</i>														
[14]	Average price per dose \$43 / dose	\$46	\$48	\$50	\$53	\$55	\$57	\$60	\$63	\$66	\$69	\$72	\$75	\$79	\$82	\$86
[15]	Naloxone purchased 12,082 doses															
[16]	Cost of Naloxone purchased \$524,283															
[17]	Naloxone doses purchased for first responders, low case	12,082	10,572	9,062	7,551	6,041	6,041	6,041	6,041	6,041	6,041	6,041	6,041	6,041	6,041	6,041
[18]	Naloxone doses purchased for first responders, base case	12,082	11,327	10,572	9,817	9,062	9,062	9,062	9,062	9,062	9,062	9,062	9,062	9,062	9,062	9,062
[19]	Naloxone doses purchased for first responders, high case	12,082	12,082	12,082	12,082	12,082	12,082	12,082	12,082	12,082	12,082	12,082	12,082	12,082	12,082	12,082
<i>Total cost for first responders</i>																
		<i>2020-2034 [F]</i>														
[20]	Low case (\$000s)	\$6,517	\$551	\$506	\$455	\$397	\$333	\$347	\$363	\$379	\$396	\$414	\$433	\$453	\$474	\$496
[21]	Base case (\$000s)	\$9,053	\$551	\$542	\$530	\$516	\$499	\$521	\$544	\$568	\$594	\$621	\$650	\$680	\$712	\$745
[22]	High case (\$000s)	\$11,588	\$551	\$578	\$606	\$636	\$665	\$695	\$726	\$758	\$791	\$828	\$867	\$907	\$949	\$993

CONFIDENTIAL**APPENDIX D****Table C.8****Estimated Cost of Naloxone, Cuyahoga County**

Sources and Notes:

See Table I for actual and projected inflation rates used.

[C]: Multiplier intended to capture labor costs beyond salary, such as fringe benefits and office costs.

[D],[F]= Σ (Year 1 to Year 15).

[1]-[3]: Year 1 from Table C.0[6]. Base case projects that the population requiring Narcan kits remains constant, high case projects that it increases by 10%, and low case projects that it decreases by 10%.

[4]: [4A] estimated based on the wholesale price for Narcan nasal spray kit (containing 2 doses) paid by Cleveland EMS in October and November of 2017. CLEVE_001627553. Year 1 onwards grown at prescription drug price inflation.

[5]: Projects the distribution of one kit per person requiring Narcan kits in Year 1, increasing to two kits distributed per individual by Year 2.

[6]=[4]*[5].

[8]: Salary estimated based on Cuyahoga County salary data for comparable employee types. CUYAH_002426286.

[9]: [9B]=([7]*[8])/10³. Year 1 onwards grown at projected employment cost inflation.

[10]=[9]*[C].

[11]=([1]*[6])/10³+ [10].[12]=([2]*[6])/10³+ [10].[13]=([3]*[6])/10³+ [10].

[14]: [E14] estimated based on the actual average price per dose of Naloxone purchased by Cleveland EMS in 2017. CLEVE_001627553. Year 1 onwards grown at prescription drug price inflation.

[15]: Based on the actual number of doses purchased by Cleveland EMS in 2017. CLEVE_001627553.

[16]=[14]*[15].

[17]-[19]: Year 1 from [15]. High case projects that the doses purchased for first responders remains constant, base case projects a 25% decline by Year 5, and low case projects a 50% decline by Year 5.

[20]=([17]*[14])/10³.[21]=([18]*[14])/10³.[22]=([19]*[14])/10³.

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Table S.8

Estimated Cost of Naloxone, Summit County

		Year 1 2020	Year 2 2021	Year 3 2022	Year 4 2023	Year 5 2024	Year 6 2025	Year 7 2026	Year 8 2027	Year 9 2028	Year 10 2029	Year 11 2030	Year 12 2031	Year 13 2032	Year 14 2033	Year 15 2034
<i>Projected population requiring Narcan kits</i>																
[1]	Population requiring Narcan kits, low case	6,576	6,529	6,482	6,435	6,388	6,341	6,294	6,247	6,200	6,153	6,106	6,059	6,012	5,965	5,918
[2]	Population requiring Narcan kits, base case	6,576	6,576	6,576	6,576	6,576	6,576	6,576	6,576	6,576	6,576	6,576	6,576	6,576	6,576	6,576
[3]	Population requiring Narcan kits, high case	6,576	6,623	6,670	6,717	6,764	6,810	6,857	6,904	6,951	6,998	7,045	7,092	7,139	7,186	7,233
<i>Estimated cost of Narcan kits</i>																
		<i>2019\$ [A]</i>														
[4]	Wholesale price \$111 / kit	\$116	\$122	\$128	\$134	\$140	\$147	\$153	\$160	\$167	\$175	\$183	\$191	\$200	\$209	\$219
[5]	Average # per person per year	1.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
[6]	Average cost per person per year	\$116	\$244	\$256	\$268	\$281	\$293	\$306	\$320	\$334	\$349	\$366	\$383	\$400	\$419	\$438
<i>Salary cost of distributing kits</i>																
		<i>2019\$ [B]</i>														
[7]	Distribution program administrators 2															
[8]	Estimated FTE salary \$55,500															
[9]	Salary cost (\$000)	\$111	\$115	\$119	\$123	\$127	\$131	\$135	\$139	\$143	\$148	\$152	\$157	\$162	\$167	\$172
<i>Labor Cost</i>																
		<i>Multiplier [C]</i>														
[10]	FTE employment cost, base case (\$000s) 1.75x	\$201	\$208	\$215	\$222	\$229	\$236	\$243	\$251	\$258	\$266	\$274	\$283	\$291	\$300	\$310
<i>Total cost of Narcan kits</i>																
		<i>2020-2034 [D]</i>														
[11]	Low case (\$000s)	\$33,372	\$965	\$1,801	\$1,873	\$1,947	\$2,021	\$2,094	\$2,170	\$2,248	\$2,328	\$2,416	\$2,507	\$2,601	\$2,698	\$2,799
[12]	Base case (\$000s)	\$35,170	\$965	\$1,812	\$1,897	\$1,985	\$2,074	\$2,163	\$2,256	\$2,353	\$2,454	\$2,564	\$2,678	\$2,798	\$2,924	\$3,055
[13]	High case (\$000s)	\$36,968	\$965	\$1,824	\$1,921	\$2,023	\$2,127	\$2,232	\$2,342	\$2,458	\$2,579	\$2,711	\$2,850	\$2,996	\$3,149	\$3,311
<i>Naloxone for first responders</i>																
		<i>2019\$ [E]</i>														
[14]	Average price per dose \$43 / dose	\$46	\$48	\$50	\$53	\$55	\$57	\$60	\$63	\$66	\$69	\$72	\$75	\$79	\$82	\$86
[15]	Naloxone purchased 5,238 doses															
[16]	Cost of Naloxone purchased \$227,302															
[17]	Naloxone doses purchased for first responders, low case	5,238	4,583	3,929	3,274	2,619	2,619	2,619	2,619	2,619	2,619	2,619	2,619	2,619	2,619	2,619
[18]	Naloxone doses purchased for first responders, base case	5,238	4,911	4,583	4,256	3,929	3,929	3,929	3,929	3,929	3,929	3,929	3,929	3,929	3,929	3,929
[19]	Naloxone doses purchased for first responders, high case	5,238	5,238	5,238	5,238	5,238	5,238	5,238	5,238	5,238	5,238	5,238	5,238	5,238	5,238	5,238
<i>Total cost for first responders</i>																
		<i>2020-2034 [F]</i>														
[20]	Low case (\$000s)	\$2,826	\$239	\$219	\$197	\$172	\$144	\$151	\$157	\$164	\$172	\$180	\$188	\$197	\$206	\$215
[21]	Base case (\$000s)	\$3,925	\$239	\$235	\$230	\$224	\$216	\$226	\$236	\$246	\$257	\$269	\$282	\$295	\$309	\$323
[22]	High case (\$000s)	\$5,024	\$239	\$251	\$263	\$276	\$288	\$301	\$315	\$329	\$343	\$359	\$376	\$393	\$411	\$431

CONFIDENTIAL**APPENDIX D****Table S.8****Estimated Cost of Naloxone, Summit County**

Sources and Notes:

See Table I for actual and projected inflation rates used.

[C]: Multiplier intended to capture labor costs beyond salary, such as fringe benefits and office costs.

[D],[F]= Σ (Year 1 to Year 15).

[1]-[3]: Year 1 from Table S.0[6]. Base case projects that the population requiring Narcan kits remains constant, high case projects that it increases by 10%, and low case projects that it decreases by 10%.

[4]=Table C.8[4].

[5]: Projects the distribution of one kit per person requiring Narcan kits in Year 1, increasing to two kits distributed per individual by Year 2.

[6]=[4]*[5].

[8]=Table C.8[8].

[9]: [9B]=([7]*[8])/10³. Year 1 onwards grown at projected employment cost inflation.

[10]=[9]*[C].

[11]=([1]*[6])/10³+ [10].[12]=([2]*[6])/10³+ [10].[13]=([3]*[6])/10³+ [10].

[14]=Table C.8[14].

[15]=Table C.8[15]*(Table S.0[2]/Table C.0[2]).

[16]=[14]*[15].

[17]-[19]: Year 1 from [15]. High case projects that the doses purchased for first responders remains constant, base case projects a 25% decline by Year 5, and low case projects a 50% decline by Year 5.

[20]=([17]*[14])/10³.[21]=([18]*[14])/10³.[22]=([19]*[14])/10³.

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Table C.9

Estimated Cost of Syringe Exchange Program, Cuyahoga County

		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15
		2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
	<i>2019\$ [A]</i>															
[1]	Monthly average # of syringes provided	41,250														
[2]	OUD % of program clients	67.4%														
[3]	Monthly avg # of syringes provided to OUD individ.	27,787														
	<i># of syringes to provide</i>															
[4]	Syringes provided per month, low case	34,734	41,680	41,680	41,680	41,680	41,264	40,847	40,430	40,013	39,596	39,180	38,763	38,346	37,929	37,512
[5]	Syringes provided per month, base case	34,734	41,680	41,680	41,680	41,680	41,680	41,680	41,680	41,680	41,680	41,680	41,680	41,680	41,680	41,680
[6]	Syringes provided per month, high case	34,734	41,680	41,680	41,680	41,680	42,097	42,514	42,931	43,348	43,764	44,181	44,598	45,015	45,432	45,848
	<i>Cost of exchange program per syringe</i>	<i>2019\$ [B]</i>														
[7]	Program cost per syringe distributed	\$1.25	\$1.28	\$1.32	\$1.35	\$1.38	\$1.42	\$1.45	\$1.48	\$1.52	\$1.55	\$1.59	\$1.63	\$1.66	\$1.70	\$1.75
	<i>Total cost of exchange program</i>	<i>2020-2034 [C]</i>														
[8]	Low case (\$000s)	\$10,867	\$535	\$658	\$675	\$691	\$708	\$717	\$726	\$735	\$744	\$754	\$764	\$774	\$784	\$795
[9]	Base case (\$000s)	\$11,325	\$535	\$658	\$675	\$691	\$708	\$724	\$741	\$758	\$775	\$794	\$813	\$833	\$853	\$873
[10]	High case (\$000s)	\$11,784	\$535	\$658	\$675	\$691	\$708	\$732	\$756	\$781	\$806	\$834	\$862	\$891	\$921	\$952

CONFIDENTIAL**APPENDIX D****Table C.9****Estimated Cost of Syringe Exchange Program, Cuyahoga County**

Sources and Notes:

See Table I for actual and projected inflation rates used.[C]= Σ (Year 1 to Year 15).

[1]: Equal to the average # of syringes distributed in the year ended June 30, 2016. Circle Health Services, Form 990 for the year ended June 30, 2016 at 44.

[2]=Table S.9[2].

[3]=[1]*[2].

[4]-[6]: All cases assume the number of syringes provided to individuals with OUD increases by 50% by Year 2. Base case assumes the number of syringes provided to individuals with OUD remains constant after Year 2, low case assumes a decline of 10%, and high case assumes an increase of 10%.

[7]: Cost based on the operating costs reported by Cleveland's Circle Health Services (Form 990 for the year ended June 30, 2016 at p. 44) and a study reporting the average cost per syringe distributed in exchange programs (Lurie P, Gorsky R, Jones TS et al. (1998)). Year 1 onwards grown at projected inflation.

[8]=([4]*12*[7])/10³.[9]=([5]*12*[7])/10³.[10]=([6]*12*[7])/10³.

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Table S.9

Estimated Cost of Syringe Exchange Program, Summit County

		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15
		2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
	<i>2019\$ [A]</i>															
[1]	Monthly average # of syringes provided	24,225														
[2]	ODU % of program clients	67.4%														
[3]	Monthly avg # of syringes provided to OUD individ.	16,318														
	<i># of syringes to provide</i>															
[4]	Syringes provided per month, low case	21,758	27,197	27,197	27,197	27,197	26,925	26,654	26,382	26,110	25,838	25,566	25,294	25,022	24,750	24,478
[5]	Syringes provided per month, base case	21,758	27,197	27,197	27,197	27,197	27,197	27,197	27,197	27,197	27,197	27,197	27,197	27,197	27,197	27,197
[6]	Syringes provided per month, high case	21,758	27,197	27,197	27,197	27,197	27,469	27,741	28,013	28,285	28,557	28,829	29,101	29,373	29,645	29,917
	<i>Cost of exchange program per syringe</i>	<i>2019\$ [B]</i>														
[7]	Program cost per syringe distributed	\$1.25	\$1.28	\$1.32	\$1.35	\$1.38	\$1.42	\$1.45	\$1.48	\$1.52	\$1.55	\$1.59	\$1.63	\$1.66	\$1.70	\$1.75
	<i>Total cost of exchange program</i>	<i>2020-2034 [C]</i>														
[8]	Low case (\$000s)	\$7,077	\$335	\$429	\$440	\$451	\$462	\$468	\$474	\$480	\$486	\$492	\$499	\$505	\$512	\$518
[9]	Base case (\$000s)	\$7,376	\$335	\$429	\$440	\$451	\$462	\$473	\$484	\$495	\$506	\$518	\$531	\$543	\$556	\$570
[10]	High case (\$000s)	\$7,675	\$335	\$429	\$440	\$451	\$462	\$477	\$493	\$509	\$526	\$544	\$562	\$581	\$601	\$621

CONFIDENTIAL**APPENDIX D****Table S.9****Estimated Cost of Syringe Exchange Program, Summit County**

Sources and Notes:

See Table I for actual and projected inflation rates used.

[C]=Σ(Year 1 to Year 15).

[1]: Actual monthly average # of syringes distributed in January and February 2019. (<https://www.scph.org/dashboards>)

[2]: Based on the % of clients of the Summit County syringe exchange program reporting heroin, fentanyl or opioid use in January-February 2019.

[3]=[1]*[2].

[4]-[6]: All cases assume the number of syringes provided to individuals with OUD increases by ~66% by Year 2. Base case assumes the number of syringes provided to individuals with OUD remains constant after Year 2, low case assumes a decline of 10% beginning in Year 6, and high case assumes an increase of 10% beginning in Year 6.

[7]: Cost based on the operating costs reported by Cleveland's Circle Health Services (Form 990 for the year ended June 30, 2016 at p. 44) and a study reporting the average cost per syringe distributed in exchange programs (Lurie P, Gorsky R, Jones TS et al. (1998)). Year 1 onwards grown at projected inflation.

[8]=([4]*12*[7])/10^3.

[9]=([5]*12*[7])/10^3.

[10]=([6]*12*[7])/10^3.

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Table C.10

Estimated Cost of HIV and HCV Treatment, Cuyahoga County

		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15
		2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
<i>HIV treatment costs</i>		<i>2019\$ [A]</i>														
[1]	Persons living with diagnosed HIV	4,940														
[2]	% infected via injection drug use	10.0%														
[3]	Opioid % of injection drug use	56.5%														
[4]	Current pop. with opioid-related HIV	279	275	270	266	262	258	254	250	246	242	238	234	231	227	224
[5]	Annual mortality risk	1.6%														
[6]	Annual cost of HIV treatment (\$000s)	\$30	\$31	\$33	\$34	\$36	\$37	\$39	\$40	\$42	\$44	\$46	\$48	\$50	\$52	\$54
[7]	Est. total HIV treatment cost (\$000s)	\$8,638	\$8,893	\$9,140	\$9,394	\$9,638	\$9,873	\$10,112	\$10,358	\$10,610	\$10,886	\$11,170	\$11,460	\$11,759	\$12,065	\$12,379
<i>HCV treatment costs</i>		<i>2019\$ [B]</i>														
[8]	Ratio of HCV-to-HIV prev. among IDUs	6.1														
[9]	Current pop. with opioid-related HCV	1,711	1,701	1,453	1,241	1,060	906	774	661	564	482	412	352	300	257	219
[10]	Annual mortality risk	0.6%														
[11]	% receiving treatment	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%
[12]	# receiving treatment for HCV	255	218	186	159	136	116	99	85	72	62	53	45	38	33	28
[13]	% cured by treatment	94.0%	94.0%	94.0%	94.0%	94.0%	94.0%	94.0%	94.0%	94.0%	94.0%	94.0%	94.0%	94.0%	94.0%	94.0%
[14]	Cost of HCV treatment (\$000s)	\$24	\$25	\$26	\$28	\$29	\$30	\$32	\$33	\$35	\$36	\$38	\$40	\$42	\$43	\$45
[15]	Est. total HCV treatment costs (\$000s)	\$6,432	\$5,770	\$5,167	\$4,627	\$4,135	\$3,689	\$3,292	\$2,937	\$2,620	\$2,342	\$2,093	\$1,871	\$1,672	\$1,495	\$1,336
<i>Total cost of treating HIV/HCV</i>		<i>2020-2034 [C]</i>														
[16]	Base case (\$000s)	\$205,851	\$15,070	\$14,663	\$14,307	\$14,020	\$13,774	\$13,562	\$13,404	\$13,295	\$13,230	\$13,228	\$13,263	\$13,331	\$13,431	\$13,560

Sources and Notes:

See Table I for actual and projected inflation rates used.

[B]: Multiplier intended to capture labor costs beyond salary, such as fringe benefits and office costs.

[C]=Σ(Year 1 to Year 15).

[1]: Ohio Department of Public Health, Cuyahoga County HIV Surveillance Data Tables, July 20, 2018.

[2]: Between 2000 and 2015, injection drug users (IDUs) represented ~6 to ~15% of new HIV diagnoses. Dawson and Kates, "HIV and the Opioid Epidemic: 5 Key Points," KFF, March 27, 2018.

[3]=2,508 thousand persons with lifetime heroin injection / 4,442 thousand persons with lifetime injection drug use. 2017 NSDUH, Table 1.96A.

[4]: [4A]=[1]*[2]*[3]. Year 1 onwards decreased by annual mortality risk in [5].

[5]: The CDC reports that 1,008,929 people were living with diagnosed HIV infection in 2016 and that there were 15,807 deaths among people with diagnosed HIV in 2016.

[6]: The CDC reports that the average annual cost of HIV care was estimated to be \$23,000 in 2010\$. Year 1 onwards grown at projected medical services inflation.

[7]=[4]*[6]. These costs represent the cost to treat current opioid-related HIV infections. The future cost of treating new opioid-related cases would be additive to this estimate. The CDC reports that the estimated lifetime HIV treatment cost is \$379,668 in 2010\$.

[8]=55.2% prevalence of HCV among IDUs / 9.0% prevalence of HIV among IDUs. Degenhardt, Peacock, Colledge et al. (2017).

[9]: [9B]=[4]*[8]. Year 1 onwards decreased by annual mortality risk in [10] and by the rate of treatments leading to cure (e.g., [11]*[13]).

[11]: Assumed treatment pattern.

[12]=[9]*[11].

[13]: Clinical studies indicate that the cure rate for HCV treatments range from ~89% to ~99%.

[14]: Generic versions of most effective HCV drugs (Epclusa and Harvoni) became available in January 2019, \$24,000 is the list price for the most common course of treatment (12-weeks). Year 1 onwards grows at projected prescription drug inflation.

[15]=[12]*[14]. These costs represent the cost to treat current opioid-related HCV infections. The future cost of treating new opioid-related cases would be additive to this estimate.

[16]=[7]+[15].

CONFIDENTIAL**APPENDIX D****Table S.10****Estimated Cost of HIV and HCV Treatment, Summit County**

		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15
		2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
<i>HIV treatment costs</i>		<i>2019\$ [A]</i>														
[1]	Persons living with diagnosed HIV	965														
[2]	% infected via injection drug use	10.0%														
[3]	Opioid % of injection drug use	56.5%														
[4]	Current pop. with opioid-related HIV	54	54	53	52	51	50	50	49	48	47	47	46	45	44	43
[5]	Annual mortality risk	1.6%														
[6]	Annual cost of HIV treatment (\$000s)	\$30	\$31	\$33	\$34	\$36	\$37	\$39	\$40	\$42	\$44	\$46	\$48	\$50	\$52	\$54
[7]	Est. total HIV treatment cost (\$000s)	\$1,687	\$1,737	\$1,785	\$1,835	\$1,883	\$1,929	\$1,975	\$2,023	\$2,073	\$2,127	\$2,182	\$2,239	\$2,297	\$2,357	\$2,418
<i>HCV treatment costs</i>		<i>2019\$ [A]</i>														
[8]	Ratio of HCV-to-HIV prev. among IDUs	6.1														
[9]	Current pop. with opioid-related HCV	334	332	284	242	207	177	151	129	110	94	80	69	59	50	43
[10]	Annual mortality risk	0.6%														
[11]	% receiving treatment	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%	15.0%
[12]	# receiving treatment for HCV	50	43	36	31	27	23	19	17	14	12	10	9	8	6	5
[13]	% cured by treatment	94.0%	94.0%	94.0%	94.0%	94.0%	94.0%	94.0%	94.0%	94.0%	94.0%	94.0%	94.0%	94.0%	94.0%	94.0%
[14]	Cost of HCV treatment (\$000s)	\$24	\$25	\$26	\$28	\$29	\$30	\$32	\$33	\$35	\$36	\$38	\$40	\$42	\$43	\$45
[15]	Est. total HCV treatment costs (\$000s)	\$1,256	\$1,127	\$1,009	\$904	\$808	\$721	\$643	\$574	\$512	\$457	\$409	\$365	\$327	\$292	\$261
<i>Total cost of treating HIV/HCV</i>		<i>2020-2034 [C]</i>														
[16]	Base case (\$000s)	\$40,212	\$2,944	\$2,864	\$2,795	\$2,739	\$2,691	\$2,649	\$2,618	\$2,597	\$2,584	\$2,584	\$2,591	\$2,604	\$2,624	\$2,679

Sources and Notes:

See Table I for actual and projected inflation rates used.

[B]: Multiplier intended to capture labor costs beyond salary, such as fringe benefits and office costs.

[C]=Σ(Year 1 to Year 15).

[1]: Ohio Department of Public Health, Summit County HIV Surveillance Data Tables, July 20, 2018.

[2]: Between 2000 and 2015, injection drug users (IDUs) represented ~6 to ~15% of new HIV diagnoses. Dawson and Kates, "HIV and the Opioid Epidemic: 5 Key Points," KFF, March 27, 2018.

[3]=2,508 thousand persons with lifetime heroin injection / 4,442 thousand persons with lifetime injection drug use. 2017 NSDUH, Table 1.96A.

[4]: [4A]=[1]*[2]*[3]. Year 1 onwards decreased by annual mortality risk in [5].

[5]: The CDC reports that 1,008,929 people were living with diagnosed HIV infection in 2016 and that there were 15,807 deaths among people with diagnosed HIV in 2016.

[6]: The CDC reports that the average annual cost of HIV care was estimated to be \$23,000 in 2010\$. Year 1 onwards grown at projected medical services inflation.

[7]=[4]*[6]. These costs represent the cost to treat current opioid-related HIV infections. The future cost of treating new opioid-related cases would be additive to this estimate. The CDC reports that the estimated lifetime HIV treatment cost is \$379,668 in 2010\$.

[8]=55.2% prevalence of HCV among IDUs / 9.0% prevalence of HIV among IDUs. Degenhardt, Peacock, Colledge et al. (2017).

[9]: [9A]=[4]*[8]. Year 1 onwards decreased by annual mortality risk in [10] and by the rate of treatments leading to cure (e.g., [11]*[13]).

[11]: Assumed treatment pattern.

[12]=[9]*[11].

[13]: Clinical studies indicate that the cure rate for HCV treatments range from ~89% to ~99%.

[14]: Generic versions of most effective HCV drugs (Epclusa and Harvoni) became available in January 2019, \$24,000 is the list price for the most common course of treatment (12-weeks). Year 1 onwards grows at projected prescription drug inflation.

[15]=[12]*[14]. These costs represent the cost to treat current opioid-related HCV infections. The future cost of treating new opioid related cases would be additive to this estimate.

[16]=[7]+[15].

CONFIDENTIAL**APPENDIX D****Table C.11****Estimated Cost of Social Support Housing, Cuyahoga County**

		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	
		2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	
	<i>Transitional housing for homeless with OUD</i>	<i>2019\$ [A]</i>															
[1]	Avg # of homeless per night	1,808															
[2]	ODU prevalence among homeless	17.9%															
[3]	Avg # of homeless with OUD per night	324															
[4]	Annual cost of supportive housing unit	\$13,000															
[5]	Housing cost (\$000s)	\$4,212	\$4,322	\$4,434	\$4,545	\$4,658	\$4,770	\$4,880	\$4,992	\$5,107	\$5,224	\$5,350	\$5,478	\$5,610	\$5,744	\$5,882	\$6,023
	<i>Total cost for transitional housing</i>	<i>2020-2034 [B]</i>															
[6]	Base case (\$000s)	\$77,019	\$4,322	\$4,434	\$4,545	\$4,658	\$4,770	\$4,880	\$4,992	\$5,107	\$5,224	\$5,350	\$5,478	\$5,610	\$5,744	\$5,882	\$6,023

Sources and Notes:

See Table I for actual and projected inflation rates used.

[B]=Σ(Year 1 to Year 15).

[1]: Point-in-time estimate of homelessness in Cuyahoga County in 2018. HUD Homelessness Data Exchange.

[2]: Based on national prevalence of OUD among homeless veterans. Iheanacho, Stefanovics, & Rosenheck (2018): "Altogether, 17.9 percent of homeless VHA users were diagnosed with OUD."

[3]=[1]*[2].

[4]: Estimated based on 2019 fair market rents published by HUD and HUD research finding that permanent supportive housing for individuals is ~144% of fair market rent for a 1-bedroom rental unit and for families is ~134% of fair market rent for a 2-bedroom rental unit. Calculation assumes that half of supportive housing units are for individuals and half are for families.

[5]: [5A]=([3]*[4])/10^3. Year 1 onwards grown at projected inflation.

[6]=[5].

CONFIDENTIAL**APPENDIX D****Table S.11****Estimated Cost of Social Support Housing, Summit County**

		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	
		2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	
	<i>Transitional housing for homeless with OUD</i>	<i>2019\$ [A]</i>															
[1]	Avg # of homeless per night	587															
[2]	ODU prevalence among homeless	17.9%															
[3]	Avg # of homeless with OUD per night	105															
[4]	Annual cost of supportive housing	\$12,500															
[5]	Housing cost (\$000s)	\$1,313	\$1,347	\$1,382	\$1,416	\$1,452	\$1,486	\$1,521	\$1,556	\$1,591	\$1,628	\$1,667	\$1,707	\$1,748	\$1,790	\$1,833	\$1,877
	<i>Total cost for transitional housing</i>	<i>2020-2034 [B]</i>															
[6]	Base case (\$000s)	\$24,000	\$1,347	\$1,382	\$1,416	\$1,452	\$1,486	\$1,521	\$1,556	\$1,591	\$1,628	\$1,667	\$1,707	\$1,748	\$1,790	\$1,833	\$1,877

Sources and Notes:

See Table I for actual and projected inflation rates used.

[B]=Σ(Year 1 to Year 15).

[1]: Point-in-time estimate of homelessness in Summit County in 2018. HUD Homelessness Data Exchange.

[2]: Based on national prevalence of OUD among homeless veterans. Iheanacho, Stefanovics, & Rosenheck (2018): "Altogether, 17.9 percent of homeless VHA users were diagnosed with OUD."

[3]=[1]*[2].

[4]: Estimated based on 2019 fair market rents published by HUD and HUD research finding that permanent supportive housing for individuals is ~144% of fair market rent for a 1-bedroom rental unit and for families is ~134% of fair market rent for a 2-bedroom rental unit. Calculation assumes that half of supportive housing units are for individuals and half are for families.

[5]: [5A]=([3]*[4])/10^3. Year 1 onwards grown at projected inflation.

[6]=[5].

APPENDIX D: PRIMARY PREVENTION

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APPENDIX D

Table C.12

Estimated Cost of Media Campaign, Cuyahoga County

		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	
		2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	
	<i>Target population for campaign</i>	<i>July 1, 2017 [A]</i>															
[1]	12-25 year old population	220,086	220,086	219,371	218,658	217,947	217,239	216,533	215,829	215,128	214,429	213,732	213,037	212,345	211,655	210,967	210,281
	<i>Estimated cost of campaign</i>	<i>2019\$ [B]</i>															
[2]	Per targeted individual	\$0.40 / month	\$0.41	\$0.42	\$0.44	\$0.45	\$0.46	\$0.47	\$0.48	\$0.49	\$0.50	\$0.51	\$0.53	\$0.54	\$0.55	\$0.56	\$0.58
[3]	# of months of campaign will run	6	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
[4]	Estimated cost per target per year	\$2.49	\$5.10	\$5.23	\$5.36	\$5.49	\$5.61	\$5.74	\$5.87	\$6.01	\$6.15	\$6.30	\$6.45	\$6.61	\$6.77	\$6.93	
	<i>Total cost of campaign</i>	<i>2020-2034 [C]</i>															
[5]	Base case (\$000s)	\$18,485	\$547	\$1,119	\$1,143	\$1,168	\$1,192	\$1,215	\$1,239	\$1,264	\$1,288	\$1,315	\$1,342	\$1,370	\$1,398	\$1,427	\$1,457

Sources and Notes:

See Table I for actual and projected inflation rates used.

[A]: National Center for Health Statistics, Bridged-Race Population Estimates, July 1st resident population age 12 to 25 years old, Cuyahoga County.

[C]=Σ(Year 1 to Year 15).

[1]: Target audience based on Georgia's "Generation Rx" campaign, which aims to prevent the misuse/abuse of prescription drugs among 12-25 year olds. Growth after Year 1 projected based on county population projections published by the Ohio Development Services Agency.

[2]: [2B] estimated based on the FDA's "The Real Cost" anti-smoking campaign. Mac Monegle et al (2018). Year 1 onwards grown at projected inflation.

[3]: Projects that media campaign will be launched by second half of Year 1.

[4]=[2]*[3].

[5]=([1]*[4])/10^3.

CONFIDENTIAL**APPENDIX D****Table S.12****Estimated Cost of Media Campaign, Summit County**

		Year 1 2020	Year 2 2021	Year 3 2022	Year 4 2023	Year 5 2024	Year 6 2025	Year 7 2026	Year 8 2027	Year 9 2028	Year 10 2029	Year 11 2030	Year 12 2031	Year 13 2032	Year 14 2033	Year 15 2034
<i>Target population for campaign July 1, 2017 [A]</i>																
[1]	12-25 year old population 94,300	94,300	94,248	94,196	94,144	94,092	94,040	93,988	93,936	93,884	93,832	93,780	93,728	93,676	93,624	93,572
<i>Estimated cost of campaign 2019\$ [B]</i>																
[2]	Per targeted individual \$0.40 / month	\$0.41	\$0.42	\$0.44	\$0.45	\$0.46	\$0.47	\$0.48	\$0.49	\$0.50	\$0.51	\$0.53	\$0.54	\$0.55	\$0.56	\$0.58
[3]	# of months of campaign will run	6	12	12	12	12	12	12	12	12	12	12	12	12	12	12
[4]	Estimated cost per target per year	\$2.49	\$5.10	\$5.23	\$5.36	\$5.49	\$5.61	\$5.74	\$5.87	\$6.01	\$6.15	\$6.30	\$6.45	\$6.61	\$6.77	\$6.93
<i>Total cost of campaign 2020-2034 [C]</i>																
[5]	Base case (\$000s)	\$8,085	\$234	\$481	\$492	\$504	\$516	\$528	\$540	\$552	\$564	\$577	\$591	\$605	\$619	\$648

Sources and Notes:

See Table I for actual and projected inflation rates used.

[A]: National Center for Health Statistics, Bridged-Race Population Estimates, July 1st resident population age 12 to 25 years old, Summit County.

[C]=Σ(Year 1 to Year 15).

[1]: Target audience based on Georgia's "Generation Rx" campaign, which aims to prevent the misuse/abuse of prescription drugs among 12-25 year olds. Growth after Year 1 projected based on county population projections published by the Ohio Development Services Agency.

[2]: [2B] estimated based on the FDA's "The Real Cost" anti-smoking campaign. Mac Monegle et al (2018). Year 1 onwards grown at projected inflation.

[3]: Projects that media campaign will be launched by second half of Year 1.

[4]=[2]*[3].

[5]=([1]*[4])/10^3.

CONFIDENTIAL**APPENDIX D****Table C.13****Estimated Cost of School-Based Prevention, Cuyahoga County**

		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15
		2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
	<i>Salary cost of personnel</i>	<i>2019\$ [A]</i>														
[1]	# of social workers required to help students affected by opioid crisis	106														
[2]	FTE salary estimate	\$45,000														
[3]	Salary cost (\$000s)	\$4,770	\$4,939	\$5,114	\$5,285	\$5,457	\$5,628	\$5,800	\$5,977	\$6,159	\$6,347	\$6,541	\$6,740	\$6,946	\$7,158	\$7,376
	<i>Estimated employment cost</i>	<i>Labor Cost Multiplier [B]</i>														
[4]	FTE employment cost, base case (\$000s)	1.75x	\$8,643	\$8,949	\$9,249	\$9,549	\$9,850	\$10,150	\$10,460	\$10,779	\$11,108	\$11,447	\$11,796	\$12,156	\$12,526	\$12,908
	<i>Estimated cost of curriculum</i>	<i>2019\$ [C]</i>														
[5]	Cost of prevention curriculum per pupil	\$52														
[6]	# of students, grades 6-12	106,380														
[7]	Cost of prevention curriculum (\$000s)	\$5,532	\$5,676	\$5,823	\$5,969	\$6,118	\$6,265	\$6,409	\$6,556	\$6,707	\$6,861	\$7,026	\$7,195	\$7,367	\$7,544	\$7,725
	<i>Estimated total cost</i>	<i>2020-2034 [D]</i>														
[8]	Base case (\$000s)	\$264,023	\$14,319	\$14,773	\$15,218	\$15,667	\$16,115	\$16,559	\$17,016	\$17,486	\$17,969	\$18,473	\$18,990	\$19,523	\$20,070	\$21,213

Sources and Notes:

See Table I for actual and projected inflation rates used.

[B]: Multiplier intended to capture labor costs beyond salary, such as fringe benefits and office costs.

[D]=Σ(Year 1 to Year 15).

[1]: Estimated based on public and private school enrollment data from the National Center for Education Statistics and the assumption that approximately 25% of students have more intensive needs due to the opioid crisis. The recommended student-social worker ratio is lower for students with intensive needs. National Association of Social Workers, Standards for School Social Work Services (2012) at p.18: "School social work services should be provided at a ratio of one school social worker to each school building serving up to 250 general education students, or a ratio of 1:250 students. When a school social worker is providing services to students with intensive needs, a lower ratio, such as 1:50, is suggested."

[2]: Salary estimated based on the salary range for school counselors in the Cleveland area reported by Glassdoor.

[3]: [3A]=([1]*[2])/10^3. Year 1 onwards grown at projected employment cost inflation.

[4]=[3]*[B].

[5]: Estimate based on SAMSHA/HHS study, which found that Youth Substance Abuse Prevention Programs cost on average \$52/pupil for materials and training. SAMSHA/HHS, "Substance Abuse Prevention Dollars and Cents: A Cost-Benefit Analysis," Table A4: Estimated Program Costs by Component (in 2002 dollars).

[6]: Public and private school enrollment data from the National Center for Education Statistics.

[7]: [7C]=([5]*[6])/10^3. Year 1 onwards grown at projected inflation.

[8]=[4]+[7].

CONFIDENTIAL**APPENDIX D****Table S.13****Estimated Cost of School-Based Prevention, Summit County**

		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15
		2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
	<i>Salary cost of personnel</i>	<i>2019\$ [A]</i>														
[1]	# of social workers required to help students affected by opioid crisis	46														
[2]	FTE salary estimate	\$45,000														
[3]	Salary cost (\$000s)	\$2,070	\$2,143	\$2,219	\$2,293	\$2,368	\$2,443	\$2,517	\$2,594	\$2,673	\$2,754	\$2,839	\$2,925	\$3,014	\$3,106	\$3,201
	<i>Estimated employment cost</i>	<i>Labor Cost Multiplier [B]</i>														
[4]	FTE employment cost, base case (\$000s)	1.75x	\$3,751	\$3,884	\$4,014	\$4,144	\$4,274	\$4,405	\$4,539	\$4,678	\$4,820	\$4,967	\$5,119	\$5,275	\$5,436	\$5,602
	<i>Estimated cost of curriculum</i>	<i>2019\$ [C]</i>														
[5]	Cost of prevention curriculum per pupil	\$52														
[6]	# of students, grades 6-12	45,599														
[7]	Cost of prevention curriculum (\$000s)	\$2,371	\$2,433	\$2,496	\$2,558	\$2,622	\$2,685	\$2,747	\$2,810	\$2,875	\$2,941	\$3,012	\$3,084	\$3,158	\$3,234	\$3,311
	<i>Estimated total cost</i>	<i>2020-2034 [D]</i>														
[8]	Base case (\$000s)	\$114,038	\$6,184	\$6,380	\$6,572	\$6,766	\$6,960	\$7,152	\$7,349	\$7,553	\$7,761	\$7,979	\$8,203	\$8,433	\$8,670	\$9,163

Sources and Notes:

See Table I for actual and projected inflation rates used.

[B]: Multiplier intended to capture labor costs beyond salary, such as fringe benefits and office costs.

[D]=Σ(Year 1 to Year 15).

[1]: Estimated based on public and private school enrollment data from the National Center for Education Statistics and the assumption that approximately 25% of students have more intensive needs due to the opioid crisis. The recommended student-social worker ratio is lower for students with intensive needs. National Association of Social Workers, Standards for School Social Work Services (2012) at p.18: "School social work services should be provided at a ratio of one school social worker to each school building serving up to 250 general education students, or a ratio of 1:250 students. When a school social worker is providing services to students with intensive needs, a lower ratio, such as 1:50, is suggested."

[2]: Salary estimated based on the salary range for school counselors in the Akron area reported by Glassdoor.

[3]: [3A]=([1]*[2])/10^3. Year 1 onwards grown at projected employment cost inflation.

[4]=[3]*[B].

[5]: Estimate based on SAMSHA/HHS study, which found that Youth Substance Abuse Prevention Programs cost on average \$52/pupil for materials and training. SAMSHA/HHS, "Substance Abuse Prevention Dollars and Cents: A Cost-Benefit Analysis," Table A4: Estimated Program Costs by Component (in 2002 dollars).

[6]: Public and private school enrollment data from the National Center for Education Statistics.

[7]: [7C]=([5]*[6])/10^3. Year 1 onwards grown at projected inflation.

[8]=[4]+[7].

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Table C.14

Estimated Cost of Medical Provider Education and Outreach, Cuyahoga County

		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	
		2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	
	<i>Education staffing requirements</i>	<i>2019\$ [A]</i>															
[1]	FTEs for medical provider outreach	3															
[2]	FTE salary estimate	\$66,000															
[3]	Salary cost (\$000s)	\$185	\$191	\$198	\$205	\$211	\$218	\$225	\$232	\$239	\$246	\$253	\$261	\$269	\$277	\$286	\$294
		<i>Labor Cost</i>															
	<i>Estimated employment cost</i>	<i>Multiplier [B]</i>															
[4]	FTE employment cost, base case (\$000s)	1.75x	\$335	\$347	\$358	\$370	\$382	\$393	\$405	\$418	\$430	\$443	\$457	\$471	\$485	\$500	\$515
		<i>Total cost of recruitment</i>															
[5]	Base case (\$000s)	\$6,310	\$335	\$347	\$358	\$370	\$382	\$393	\$405	\$418	\$430	\$443	\$457	\$471	\$485	\$500	\$515

Sources and Notes:

See Table I for actual and projected inflation rates used.

[B]: Multiplier intended to capture labor costs beyond salary, such as fringe benefits and office costs.

[C]=Σ(Year 1 to Year 15).

[1]: Based on # of FTEs in county reported by Ohio Development Services Agency; assumption that ~10% of physicians will be targeted for education; and study of academic detailing visits (Barth, Ball, Adams, et al. (2017)).

[2]: Salary estimated based on Cuyahoga County salary data for comparable employee types. CUYAH_002426286.

[3]: [3A]=([1]*[2])/10^3. Year 1 onwards grown at projected employment cost inflation.

[4]=[3]*[B].

[5]=[4].

CONFIDENTIAL**APPENDIX D****Table S.14****Estimated Cost of Medical Provider Education and Outreach, Summit County**

			Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15
			2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
	<i>Education staffing requirements</i>	<i>2019\$ [A]</i>															
[1]	FTEs for medical provider outreach	1															
[2]	FTE salary estimate	\$66,000															
[3]	Salary cost (\$000s)	\$53	\$55	\$57	\$59	\$60	\$62	\$64	\$66	\$68	\$70	\$72	\$75	\$77	\$79	\$82	\$84
		<i>Labor Cost</i>															
	<i>Estimated employment cost</i>	<i>Multiplier [B]</i>															
[4]	FTE employment cost, base case (\$000s)	1.75x	\$96	\$99	\$102	\$106	\$109	\$112	\$116	\$119	\$123	\$127	\$131	\$135	\$139	\$143	\$147
	<i>Total cost of recruitment</i>	<i>2020-2034 [C]</i>															
[5]	Base case (\$000s)	\$1,803	\$96	\$99	\$102	\$106	\$109	\$112	\$116	\$119	\$123	\$127	\$131	\$135	\$139	\$143	\$147

Sources and Notes:

See Table I for actual and projected inflation rates used.

[B]: Multiplier intended to capture labor costs beyond salary, such as fringe benefits and office costs.

[C]=Σ(Year 1 to Year 15).

[1]: Based on # of FTEs in county reported by Ohio Development Services Agency; assumption that ~10% of physicians will be targeted for education; and study of academic detailing visits (Barth, Ball, Adams, et al. (2017)).

[2]=Table C.14[2].

[3]: [3A]=([1]*[2])/10^3. Year 1 onwards grown at projected employment cost inflation.

[4]=[3]*[B].

[5]=[4].

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APPENDIX D

Table C.15

Estimated Cost of Drug Disposal Programs, Cuyahoga County

		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15
		2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
<i>Drug disposal sites</i>		<i>2019\$ [A]</i>														
[1]	Current number of disposal sites	64														
[2]	Proposed program expansion	50.0%														
[3]	Proposed number of disposal sites	96														
[4]	Annual operating cost per disposal site	\$3,000														
[5]	Annual program cost (\$000s)	\$288	\$295	\$303	\$311	\$319	\$326	\$334	\$341	\$349	\$357	\$366	\$375	\$384	\$393	\$402
[6]	1x cost of program expansion (\$000s)	\$27	\$28													
<i>Take-back event costs</i>		<i>2019\$ [B]</i>														
[7]	Number of drug take back events	48														
[8]	Cost per drug take back event	\$2,250														
[9]	Take-back event costs (\$000s)	\$108	\$112	\$116	\$120	\$124	\$127	\$131	\$135	\$139	\$144	\$148	\$153	\$157	\$162	\$167
[10]	FTEs to coordinate events	1														
[11]	FTE salary estimate	\$55,500														
[12]	Salary cost (\$000s)	\$56	\$57	\$60	\$61	\$63	\$65	\$67	\$70	\$72	\$74	\$76	\$78	\$81	\$83	\$86
<i>Estimated employment cost</i>		<i>Labor Cost Multiplier [C]</i>														
[13]	FTE employment cost, base case (\$000s)	1.75x	\$101	\$104	\$108	\$111	\$115	\$118	\$122	\$125	\$129	\$133	\$137	\$141	\$146	\$150
[14]	Opioid % of medication take-backs	66%	66%	66%	66%	66%	66%	66%	66%	66%	66%	66%	66%	66%	66%	66%
<i>Total cost of disposal programs</i>		<i>2020-2034 [D]</i>														
[15]	Base case (\$000s)	\$6,136	\$354	\$345	\$355	\$365	\$375	\$385	\$395	\$405	\$416	\$427	\$439	\$450	\$462	\$488

Sources and Notes:

See Table I for actual and projected inflation rates used.

[C]: Multiplier intended to capture labor costs beyond salary, such as fringe benefits and office costs.

[D]=Σ(Year 1 to Year 15).

[2]: A GAO report (GAO-18-25, October 2017) found that only 3% of pharmacies and other entities eligible to collect unused Rx drugs for disposal have volunteered to do so.

[3]=[1]*(1+[2]).

[4]: King County, WA estimated the cost of drug disposal program was \$7,188 per site (2018\$). Other disposal programs have indicated the cost per site is in the range of \$1,300 to \$2,800 (2018\$).

[5]: [5A]=([3]*[4])/10^3. Year 1 onwards grown at projected inflation.

[6]: [6A]=([3]-[1])*\$850 (cost of steel drug disposal boxes sold by NADDI). Year 1 grown at projected inflation.

[7]: Assumes one event per week, excluding holidays.

[8]: Average event cost of \$2,000 + average drug disposal cost of \$250 per event.

[9]: [9B]=([7]*[8])/10^3. Year 1 onwards grown at projected inflation.

[11]: Salary estimated based on Cuyahoga County salary data for comparable employee types. CUYAH_002426286.

[12]=([10]*[11])/10^3. Year 1 onwards grown at projected employment cost inflation.

[13]=[12]*[C].

[14]: Based on study finding that 66% of medications returned in take-back initiatives were opioids between 2011 and 2015. Jaramillo-Stametz, Stewart, Ochs et al. (2018).

[15]=[14]*([5]+[6]+[9]+[13]).

CONFIDENTIAL**APPENDIX D****Table S.15****Estimated Cost of Drug Disposal Programs, Summit County**

		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	
		2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	
	<i>Drug disposal sites</i>	<i>2019\$ [A]</i>															
[1]	Current number of disposal sites	20															
[2]	Proposed program expansion	50.0%															
[3]	Proposed number of disposal sites	30															
[4]	Annual operating cost per disposal site	\$3,000															
[5]	Annual program cost (\$000s)	\$90	\$92	\$95	\$97	\$100	\$102	\$104	\$107	\$109	\$112	\$114	\$117	\$120	\$123	\$126	\$129
[6]	1x cost of program expansion (\$000s)	\$9	\$9														
	<i>Take-back event costs</i>	<i>2019\$ [B]</i>															
[7]	Number of drug take back events	48															
[8]	Cost per drug take back event	\$2,250															
[9]	Take-back event costs (\$000s)	\$108	\$112	\$116	\$120	\$124	\$127	\$131	\$135	\$139	\$144	\$148	\$153	\$157	\$162	\$167	\$172
[10]	FTEs to coordinate events	1															
[11]	FTE salary estimate	\$55,500															
[12]	Salary cost (\$000s)	\$56	\$57	\$60	\$61	\$63	\$65	\$67	\$70	\$72	\$74	\$76	\$78	\$81	\$83	\$86	\$88
	<i>Labor Cost</i>																
	<i>Estimated employment cost</i>	<i>Multiplier [C]</i>															
[13]	FTE employment cost, base case (\$000s)	1.75x	\$101	\$104	\$108	\$111	\$115	\$118	\$122	\$125	\$129	\$133	\$137	\$141	\$146	\$150	\$155
[14]	Opioid % of medication take-backs	66%	66%	66%	66%	66%	66%	66%	66%	66%	66%	66%	66%	66%	66%	66%	66%
	<i>Total cost of disposal programs</i>	<i>2020-2034 [D]</i>															
[15]	Base case (\$000s)	\$3,733	\$207	\$208	\$214	\$221	\$227	\$233	\$240	\$247	\$254	\$261	\$269	\$276	\$284	\$292	\$301

Sources and Notes:

See Table I for actual and projected inflation rates used.

[C]: Multiplier intended to capture labor costs beyond salary, such as fringe benefits and office costs.

[D]=Σ(Year 1 to Year 15).

[2]: A GAO report (GAO-18-25, October 2017) found that only 3% of pharmacies and other entities eligible to collect unused Rx drugs for disposal have volunteered to do so.

[3]=[1]*(1+[2]).

[4]: King County, WA estimated the cost of drug disposal program was \$7,188 per site (2018\$). Other disposal programs have indicated the cost per site is in the range of \$1,300 to \$2,800 (2018\$).

[5]: [5A]=([3]*[4])/10^3. Year 1 onwards grown at projected inflation.

[6]: [6A]=([3]-[1])*\$850 (cost of steel drug disposal boxes sold by NADDI). Year 1 grown at projected inflation.

[7]: Assumes one event per week, excluding holidays.

[8]: Average event cost of \$2,000 + average drug disposal cost of \$250 per event.

[9]: [9B]=([7]*[8])/10^3. Year 1 onwards grown at projected inflation.

[11]=Table C.15[11].

[12]=([10]*[11])/10^3. Year 1 onwards grown at projected employment cost inflation.

[13]=[12]*[C].

[14]: Based on study finding that 66% of medications returned in take-back initiatives were opioids between 2011 and 2015. Jaramillo-Stametz, Stewart, Ochs et al. (2018).

[15]=[14]*([5]+[6]+[9]+[13]).

Table C.16

Estimated Cost of Law Enforcement Interventions, Cuyahoga County

		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15
		2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
[1]	Law enforcement staffing requirements	2019\$ [A]														
[1]	Detectives investigating overdoses	25														
[2]	FTE salary estimate	\$63,000														
[3]	Salary cost (\$'000s)	\$1,575	\$1,631	\$1,689	\$1,745	\$1,802	\$1,858	\$1,915	\$1,974	\$2,034	\$2,096	\$2,160	\$2,226	\$2,293	\$2,363	\$2,436 \$2,510
[4]	County prosecutors	100														
[5]	Opioid-related % of charges	11.0%														
[6]	FTE salary estimate	\$55,500														
[7]	Salary cost (\$'000s)	\$608	\$630	\$652	\$674	\$696	\$718	\$740	\$762	\$785	\$809	\$834	\$860	\$886	\$913	\$941 \$969
	Labor Cost															
	Estimated employment cost	Multiplier [B]														
[8]	FTE employment cost, base case (\$'000s)	1.75x	\$3,956	\$4,096	\$4,233	\$4,371	\$4,508	\$4,646	\$4,788	\$4,934	\$5,084	\$5,239	\$5,399	\$5,564	\$5,733	\$5,908 \$6,089
	Total cost of recruitment	2020-2034 [C]														
[9]	Base case (\$'000s)	\$74,548	\$3,956	\$4,096	\$4,233	\$4,371	\$4,508	\$4,646	\$4,788	\$4,934	\$5,084	\$5,239	\$5,399	\$5,564	\$5,733	\$5,908 \$6,089

Sources and Notes:

See Table I for actual and projected inflation rates used.

[B]: Multiplier intended to capture labor costs beyond salary, such as fringe benefits and office costs.

$$[C] = \Sigma(\text{Year 1 to Year 15}).$$

[1]: Officers working in heroin-involved death investigation (HIDI) unit (5 officers currently staffed + 20 additional officers required). See Deposition of Gary Gingell, November 20, 2018, pp. 243-244.

[2]: Based on 2019 budget salary range for Patrol Officer I position in Cleveland Division of Police.

[3]: [3A]=([1]*[2])/10^3. Year 1 onwards grown at projected employment cost inflation.

[4]: Approximate # of attorneys employed in the Criminal Division of the Cuyahoga County Office of the Prosecutor.

[5]: 2017 opioid-related % of charges for Cuyahoga County Office of the Prosecutor, see Cutler Report, Table III.4[3].

[6]: Based on salary disclosed in job posting for Assistant Prosecuting Attorney position in Cuyahoga County Office of the Prosecutor in February 2019.

[7]: [7A]=[4]*[5]*[6])/10^3. Year 1 onwards grown at projected employment cost inflation.

$$[8] = ([3] + [7]) * [B].$$
$$[9]=[8].$$

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APPENDIX D

Table S.16

Estimated Cost of Law Enforcement Interventions, Summit County

		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15
		2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
	<i>Law enforcement staffing requirements</i>	<i>2019\$ [A]</i>														
[1]	Detectives investigating overdoses	4														
[2]	FTE salary estimate	\$59,000														
[3]	Salary cost (\$000s)	\$236	\$244	\$253	\$261	\$270	\$278	\$287	\$296	\$305	\$314	\$324	\$333	\$344	\$354	\$376
[4]	County prosecutors	29														
[5]	Opioid-related % of crimes	11.8%														
[6]	FTE salary estimate	\$56,000														
[7]	Salary cost (\$000s)	\$192	\$199	\$206	\$213	\$220	\$226	\$233	\$241	\$248	\$255	\$263	\$271	\$280	\$288	\$306
	<i>Labor Cost</i>															
	<i>Estimated employment cost</i>	<i>Multiplier [B]</i>														
[8]	FTE employment cost, base case (\$000s)	1.75x	\$775	\$803	\$830	\$857	\$884	\$911	\$938	\$967	\$997	\$1,027	\$1,058	\$1,091	\$1,124	\$1,193
	<i>Total cost of recruitment</i>	<i>2020-2034 [C]</i>														
[9]	Base case (\$000s)	\$14,612	\$775	\$803	\$830	\$857	\$884	\$911	\$938	\$967	\$997	\$1,027	\$1,058	\$1,091	\$1,124	\$1,193

Sources and Notes:

See Table I for actual and projected inflation rates used.

[B]: Multiplier intended to capture labor costs beyond salary, such as fringe benefits and office costs.

[C]=Σ(Year 1 to Year 15).

[1]: Officers working on heroin-involved death investigations (2 officers currently staff plus 2 additional officers required). See AKRON_001121745.

[2]: Based on salary range disclosed in job posting for Police Officer position in Akron Police Division in February 2019.

[3]: [3A]=([1]*[2])/10^3. Year 1 onwards grown at projected employment cost inflation.

[4]: Approximate # of prosecutors employed in the Criminal Division of the Summit County Prosecutor. Summit County 2019 Operating Budget at p. 282.

[5]: 2017 opioid-related % of crimes for Summit County Office of the Prosecutor, see Cutler Report, Table III.4[9].

[6]: Based on salary range disclosed in job posting for Assistant Prosecutor position in Summit County Prosecutor.

[7]: [7A]=([4]*[5]*[6])/10^3. Year 1 onwards grown at projected employment cost inflation.

[8]=([3]+[7])*[B].

[9]=[8].

APPENDIX D: PRIMARY PREVENTION

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APPENDIX D

Table C.17

Estimated Cost of Tracking Abatement Progress, Cuyahoga County

		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	
		2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	
	<i>Increase medical examiner staffing</i>	<i>2019\$ [A]</i>															
[1]	Forensic scientist FTEs	3															
[2]	FTE salary estimate	\$50,000															
[3]	Salary cost (\$000s)	\$150	\$155	\$161	\$166	\$172	\$177	\$182	\$188	\$194	\$200	\$206	\$212	\$218	\$225	\$232	\$239
[4]	Autopsy technician FTEs	1															
[5]	FTE salary estimate	\$45,000															
[6]	Salary cost (\$000s)	\$45	\$47	\$48	\$50	\$51	\$53	\$55	\$56	\$58	\$60	\$62	\$64	\$66	\$68	\$70	\$72
	<i>Labor Cost</i>																
	<i>Estimated employment cost</i>	<i>Multiplier [B]</i>															
[7]	FTE employment cost, base case (\$000s)	1.75x	\$353	\$366	\$378	\$390	\$403	\$415	\$428	\$441	\$454	\$468	\$482	\$497	\$512	\$528	\$544
	<i>Total cost of recruitment</i>	<i>2020-2034 [C]</i>															
[8]	Base case (\$000s)	\$6,658	\$353	\$366	\$378	\$390	\$403	\$415	\$428	\$441	\$454	\$468	\$482	\$497	\$512	\$528	\$544

Sources and Notes:

See Table I for actual and projected inflation rates used.

[B]: Multiplier intended to capture labor costs beyond salary, such as fringe benefits and office costs.

[C]=Σ(Year 1 to Year 15).

[1]-[2], [4]-[5]: Based on 2018 personnel cost commitments for heroin/fentanyl crisis as reported by Cuyahoga County Medical Examiner's Office. CUYAH_001633454-55.

[3]: [3A]=([1]*[2])/10^3. Year 1 onwards grown at projected employment cost inflation.

[6]: [6A]=([4]*[5])/10^3. Year 1 onwards grown at projected employment cost inflation.

[7]=([3]+[6])*[B].

[8]=[7].

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APPENDIX D

Table S.17

Estimated Cost of Tracking Abatement Progress, Summit County

		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15
		2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
	<i>Increase medical examiner staffing</i>	<i>2019\$ [A]</i>														
[1]	Forensic scientist FTEs	1														
[2]	FTE salary estimate	\$50,000														
[3]	Salary cost (\$000s)	\$50	\$52	\$54	\$55	\$57	\$59	\$61	\$63	\$65	\$67	\$69	\$71	\$73	\$75	\$80
[4]	Autopsy technician FTEs	1														
[5]	FTE salary estimate	\$45,000														
[6]	Salary cost (\$000s)	\$45	\$47	\$48	\$50	\$51	\$53	\$55	\$56	\$58	\$60	\$62	\$64	\$66	\$68	\$72
	<i>Estimated employment cost</i>	<i>Labor Cost Multiplier [B]</i>														
[7]	FTE employment cost, base case (\$000s)	1.75x	\$172	\$178	\$184	\$190	\$196	\$202	\$208	\$215	\$221	\$228	\$235	\$242	\$249	\$257
	<i>Total cost of recruitment</i>	<i>2020-2034 [D]</i>														
[8]	Base case (\$000s)	\$3,244	\$172	\$178	\$184	\$190	\$196	\$202	\$208	\$215	\$221	\$228	\$235	\$242	\$249	\$257

Sources and Notes:

See Table I for actual and projected inflation rates used.

[B]: Multiplier intended to capture labor costs beyond salary, such as fringe benefits and office costs.

[C]=Σ(Year 1 to Year 15).

[2]=Table C.17[2].

[3]: [3A]=([1]*[2])/10^3. Year 1 onwards grown at projected employment cost inflation.

[5]=Table C.17[5].

[6]: [6A]=([4]*[5])/10^3. Year 1 onwards grown at projected employment cost inflation.

[7]=([3]+[6])*[B].

[8]=[7].

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APPENDIX D

Table C.18

Estimated Cost of Court System Resources, Cuyahoga County

		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15
		2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
	<i>Staff court systems</i>	<i>2019\$ [A]</i>														
[1]	FTEs required for system coordination	2														
[2]	FTE salary estimate	\$73,500														
[3]	Salary cost (\$000s)	\$147	\$152	\$158	\$163	\$168	\$173	\$179	\$184	\$190	\$196	\$202	\$208	\$214	\$221	\$234
						</										

Sources and Notes:

See Table I for actual and projected inflation rates used.

[B]: Multiplier intended to capture labor costs beyond salary, such as fringe benefits and office costs.

[C]=Σ(Year 1 to Year 15).

[1]: Assumes 1 FTE staffed at Cuyahoga County Common Pleas Court and 1 FTE staffed at Cleveland Municipal Court.

[2]: Salary estimated based on Cuyahoga County salary data for comparable employee types. CUYAH_002426286.

[3]: [3A]=([1]*[2])/10^3. Year 1 onwards grown at projected employment cost inflation.

[4]=[3]*[B].

[5]=[4].

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APPENDIX D

Table S.18

Estimated Cost of Court System Resources, Summit County

		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15
		2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
	<i>Staff court systems</i>	<i>2019\$ [A]</i>														
[1]	FTEs required for system coordination	2														
[2]	FTE salary estimate	\$73,500														
[3]	Salary cost (\$000s)	\$147	\$152	\$158	\$163	\$168	\$173	\$179	\$184	\$190	\$196	\$202	\$208	\$214	\$221	\$234
	<i>Labor Cost</i>															
	<i>Estimated employment cost</i>	<i>Multiplier [B]</i>														
[4]	FTE employment cost, base case (\$000s)	1.75x	\$266	\$276	\$285	\$294	\$304	\$313	\$322	\$332	\$342	\$353	\$364	\$375	\$386	\$410
	<i>Total cost of recruitment</i>	<i>2020-2034 [C]</i>														
[5]	Base case (\$000s)	\$5,019	\$266	\$276	\$285	\$294	\$304	\$313	\$322	\$332	\$342	\$353	\$364	\$375	\$386	\$410

Sources and Notes:

See Table I for actual and projected inflation rates used.

[B]: Multiplier intended to capture labor costs beyond salary, such as fringe benefits and office costs.

[C]=Σ(Year 1 to Year 15).

[1]: Assumes 1 FTE staffed at Summit County Court of Common Pleas and 1 FTE staffed at Akron Municipal Court.

[2]=Table C.18[2].

[3]: [3A]=([1]*[2])/10^3. Year 1 onwards grown at projected employment cost inflation.

[4]=[3]*[B].

[5]=[4].

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APPENDIX D

Table S.19

Estimated Cost of Data-Informed Systems Re-Engineering & Management, Summit County

		Year 1 2020	Year 2 2021	Year 3 2022	Year 4 2023	Year 5 2024	Year 6 2025	Year 7 2026	Year 8 2027	Year 9 2028	Year 10 2029	Year 11 2030	Year 12 2031	Year 13 2032	Year 14 2033	Year 15 2034
	<i>Team employment costs</i>															
	<i>2019\$ [A]</i>															
[1]	Executive director	1														
[2]	FTE salary estimate	\$122,400														
[3]	Salary cost (\$000s)	\$122	\$127	\$131	\$136	\$140	\$144	\$149	\$153	\$158	\$163	\$168	\$173	\$178	\$184	\$189
[4]	Program managers	2														
[5]	FTE salary estimate	\$76,000														
[6]	Salary cost (\$000s)	\$152	\$157	\$163	\$168	\$174	\$179	\$185	\$190	\$196	\$202	\$208	\$215	\$221	\$228	\$235
[7]	Data analyst	1														
[8]	FTE salary estimate	\$75,000														
[9]	Salary cost (\$000s)	\$75	\$78	\$80	\$83	\$86	\$88	\$91	\$94	\$97	\$100	\$103	\$106	\$109	\$113	\$116
[10]	Staff assistant	1														
[11]	FTE salary estimate	\$57,132														
[12]	Salary cost (\$000s)	\$57	\$59	\$61	\$63	\$65	\$67	\$69	\$72	\$74	\$76	\$78	\$81	\$83	\$86	\$88
	<i>Labor Cost</i>															
	<i>Estimated employment cost</i>															
	<i>Multiplier [B]</i>															
[13]	Employment cost, base case (\$000s)	1.75x	\$737	\$763	\$788	\$814	\$839	\$865	\$891	\$919	\$947	\$976	\$1,005	\$1,036	\$1,068	\$1,100
	<i>Total cost of team</i>															
	<i>2020-2034 [C]</i>															
[14]	Base case (\$000s)	\$13,881	\$737	\$763	\$788	\$814	\$839	\$865	\$891	\$919	\$947	\$976	\$1,005	\$1,036	\$1,068	\$1,100

Sources and Notes:

See Table I for actual and projected inflation rates used.

[B]: Multiplier intended to capture labor costs beyond salary, such as fringe benefits and office costs.

[C]=Σ(Year 1 to Year 15).

[2], [5], [8] and [11] based on Government Performance Lab (GPL) budget salaries.

[3]: [3A]=([1]*[2])/10^3. Year 1 onwards grown at projected employment cost inflation.

[6]: [6A]=([4]*[5])/10^3. Year 1 onwards grown at projected employment cost inflation.

[9]: [9A]=([7]*[8])/10^3. Year 1 onwards grown at projected employment cost inflation.

[12]: [12A]=([10]*[11])/10^3. Year 1 onwards grown at projected employment cost inflation.

[13]=([3]+[6]+[9]+[12])*[B].

[14]=[13].

GOVERNMENT PERFORMANCE LAB PROJECTS¹

BEHAVIORAL HEALTH & HOMELESSNESS PROJECTS

- Bernalillo County Behavioral Health Services
- Denver Permanent Supportive Housing Pay for Success
- Los Angeles Homeless Services Authority Performance Improvement
- Massachusetts Permanent Supportive Housing Pay for Success
- Seattle, WA Homeless Service Contracts
- Boston, MA Department of Neighborhood Development Rapid Rehousing Performance Improvement
- Boulder, CO Homeless Shelter Contracts
- Chicago, IL Homelessness Services Performance Improvement
- Connecticut Family Stability Pay for Success
- Florida Child Welfare Behavioral Health Treatment
- Illinois Developmental Disabilities Performance Improvement
- Las Vegas, NV Homeless Services Pilot
- Louisville, KY Metro Department of Corrections Pay for Success Feasibility
- Massachusetts Shelter Contract Performance Improvement
- Napa County Performance Improvement Initiatives
- New Mexico Supportive Housing Pay for Success Feasibility
- New York Supportive Housing Olmstead Cohort
- Olmstead Supportive Housing Cohort
- Placer County, CA Homelessness and Behavioral Health Performance Improvement
- Rhode Island Division of Developmental Disabilities Active Contract Management
- Rhode Island Permanent Supportive Housing Pay for Success
- Salt Lake County Homelessness Collective Impact
- Sonoma County, CA Housing Instability and Behavioral Health Collective Impact
- Washington Supportive Housing Olmstead Cohort

CHILDREN & FAMILIES PROJECTS

- Connecticut Department of Children and Families Enhanced Service Coordination
- Illinois Wraparound Services for Child Welfare and Juvenile Justice-Involved Youth
- Michigan Strong Beginnings Pay for Success
- New Haven, CT Youth Violence Prevention
- Rhode Island Department of Children, Youth, and Families Performance Improvement
- South Carolina Nurse Family Partnership Pay for Success
- Arizona Child Welfare Performance Improvement
- Chicago, IL Coordinated Case Management for High-Needs Families
- Illinois Child Welfare Pay for Success Feasibility
- Nevada Pre-K Pay for Success Feasibility
- New Hampshire Child Welfare Intake and Foster Care

¹ <https://govlab.hks.harvard.edu/projects>

- New York City Children’s Cabinet Performance Improvement
- Rhode Island Department of Health Family Home Visiting Performance Improvement
- Rhode Island Department of Health Pay for Success Feasibility
- Riverside County Active Contract Management for Family Preservation
- Seattle Criminal Justice-Involved Youth Services
- Vermont Agency of Human Services Pay for Success Feasibility
- Washington Department of Children, Youth, and Families Prevention Services Integration

CRIMINAL JUSTICE PROJECTS

- Alameda County Recidivism Reduction Through Life Coaching and Mentoring Services
- Arkansas Recidivism Reduction Pay for Success Project
- Baltimore, MD Police Department IT Procurement
- California Criminal Justice Pay for Success Grant Competition
- Illinois Corrections Internal Programming Restructuring Performance Improvement
- Illinois Department of Juvenile Justice Performance Improvement
- Illinois Vocational Programs for Corrections Performance Improvement
- Massachusetts Juvenile Justice Recidivism Reduction Pay for Success
- New York State Criminal Justice Re-Entry Services
- Pennsylvania Criminal Justice Pay for Success
- Rhode Island Department of Corrections Discharge Planning Performance Improvement

EDUCATION & JOBS PROJECTS

- California Department of Social Services SNAP Job Training and Employment Services
- Massachusetts Pathways to Economic Advancement Pay for Success
- Rhode Island Workforce Development
- San Francisco, CA Workforce Development Contract Alignment
- Washington, DC Workforce Development Agency Coordination
- Chicago Pay for Success Pre-K Expansion
- Chicago, IL Workforce Services Performance Improvement
- Cuyahoga County TANF and SNAP Workforce Development
- Glendale, AZ After School Education Services
- Illinois Career Outcomes for Higher Education
- Massachusetts Veterans Coordinated Approach to Recovery and Employment Pay for Success
- Memphis, TN Shelby County School District Student Support Services
- North Carolina Performance Improvement in Workforce Development
- Providence, RI Workforce Development Services
- Rhode Island Adult Basic Education Performance Improvement
- Rhode Island TANF Work Supports
- San Francisco, CA Performance Based Payments Pilot
- San Francisco, CA Workforce Development and Mobility Mentoring
- Washington, DC One Stop Contracts

PROCUREMENT SYSTEMS PROJECTS

- Boston, MA Asphalt Resurfacing
- Boston, MA Capital Project IT System
- Boston, MA Procurement for Bike Share Operator
- Boston, MA Vendor Diversity
- Charleston, SC Waste Collection Services
- Indianapolis, IN Technology Service Contracts
- Little Rock, AR Vendor Report Cards
- Louisville, KY Strategic Procurement System
- Mesa, AZ Blight Remediation
- Saint Paul, MN Street Construction
- Tempe, AZ City Employee Wellness
- Wichita, KS Ground Maintenance Contracts
- Baltimore, MD Pay for Success Feasibility
- Boston, MA Capital Projects Prioritization Framework
- Boston, MA Smart Street Lights
- Cambridge, MA Constituent Relationship Management System
- Charleston, SC Affordable Housing Development
- Chicago Department of Family and Support Services Strategic Procurement
- Corona, CA Asphalt Resurfacing Services
- Corona, CA Vendor Evaluation
- Glendale, AZ Open Contracting Pilot
- Houston, TX Pay for Success Feasibility
- Kansas City, KS Vendor Report Cards
- Little Rock, AR Procurement Reform
- Los Angeles Strategic Procurement System
- Louisville, KY Vendor Report Cards
- Massachusetts Strategic Operations
- Minneapolis, MN Professional Services Contracts
- Naperville, IL Technology Contracts
- Oklahoma City, OK Street Construction Projects
- Portland, OR Street Construction
- Providence, RI Vendor Report Cards
- Rhode Island Division of Purchases Performance Improvement
- San Francisco, CA Human Services Procurement Reform
- Santa Cruz Homelessness Services Performance Improvement
- Santiago, Chile Strategic Procurement System
- Seattle Performance Management System
- Sioux Falls Public Works Professional Services Procurement
- Vendor Report Cards Cities Cohort

Summary of Errata - Appendix D

<i>\$ in millions</i>	Annual Cost:	15-Year Estimate: 2020-2034			Report	App D
	Year 5 (2024)	Low	Base	High	Section	Table
<u>Cuyahoga</u>						
Special Populations: Child Welfare - Original	\$17.6	\$288.6	\$288.6	\$288.6	VI.C.5	Table C.5
Special Populations: Child Welfare - Corrected	\$18.5	\$303.6	\$303.6	\$303.6	VI.C.5	Table C.5
Net Impact of Correction(s)	\$0.9	\$15.1	\$15.1	\$15.1		
% Impact of Correction(s)	5.2%	5.2%	5.2%	5.2%		
<u>Summit</u>						
Special Populations: Child Welfare - Original	\$13.2	\$216.8	\$216.8	\$216.8	VI.C.5	Table S.5
Special Populations: Child Welfare - Corrected	\$13.9	\$227.4	\$227.4	\$227.4	VI.C.5	Table S.5
Net Impact of Correction(s)	\$0.6	\$10.6	\$10.6	\$10.6		
% Impact of Correction(s)	4.9%	4.9%	4.9%	4.9%		

**Appendix B - Materials Considered
(revised 4/16/2019)**

Date	Author(s)	Title	Source
11/7/2018	Cuyahoga County Medical Examiner's Office	Heroin/Fentanyl/Cocaine Related Deaths in Cuyahoga County: 2018 October Update	http://medicalexaminer.cuyahogacounty.us/pdf_medicalexaminer/en-US/HeroinFentanylReports/110718-HeroinFentanylReport.pdf
12/17/2018	Summit County ADM Board	Summit County Opiate Task Force Quarterly Dashboard	SUMMIT_002053851
4/2/2015	Scott Wexelblatt, Susan Ford	Maternal Fetal Issues for Physicians: Optimal Care for Infants with neonatal abstinence syndrome, Presentation to the National RX Drug Abuse Summit	https://www.slideshare.net/OPUNITE/rx15-clinical-wed4301wexelblattford2warneroussosross
6/6/2017	Max Blau	STAT forecast: Opioids could kill nearly 500,000 Americans in the next decade	STAT, https://www.statnews.com/2017/06/27/opioid-deaths-forecast
2016	Cuyahoga County Board of Health	Cuyahoga County Opiate Task Force Report: 2016	CUYAH_000018265
6/25/2018	Summit County ADM Board	Summit County Opiate Task Force Meeting (Summit 001164135)	https://www.summitcountyaddictionhelp.org/Data/Sites/19/attachments/otf-stakeholders-mtg-notes-06182018-final.pdf
8/23/2018	Allison Pitt, Keith Humphreys, Margaret Brandeau	Modeling Health Benefits and Harms of Public Policy Responses to the US Opioid Epidemic	American Journal of Public Health. October 2018, Vol 108, No. 10: 1394-1400 and Supplement
7/31/2017	John Brooklyn and Stacey Sigmon	Vermont Hub-and-Spoke Model of Care For Opioid Use Disorder: Development, Implementation, and Impact	Journal of Addiction Medicine, Volume 11, Number 4, July/Aug. 2017
12/1/2018	Yamilette Hernandez et al.	How Massachusetts, Vermont, and New York are Taking Action to Address the Opioid Epidemic	American Journal of Public Health, 108(12), pp. 1621-1622
	American Society of Addiction Medicine	ASAM Patient Placement Criteria	https://www.asam.org/resources/the-asam-criteria/about
10/2/2018	Emma Sandoe, Carrie E. Fry, Richard G. Frank	Policy Levers That States Can Use To improve Opioid Addiction Treatment And Address The Opioid Epidemic	Health Affairs Blog, https://www.healthaffairs.org/doi/10.1377/hblog20180927.51221/full/

1/8/2013	Carlos Blanco et al.	Probability and predictors of treatment-seeking for prescription opioid use disorders: A National Study	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3636152/
12/1/2018	Joshua A. Barocas et al.	Estimated Prevalence of Opioid Use Disorder in Massachusetts, 2011-2015: A Capture-Recapture Analysis	American Journal of Public Health 108, no. 12 (December 1, 2018): pp. 1675-1681
	Ohio Department of Mental Health and Addiction Services	Workforce development as Part of the 21st Century Cures Act	
9/14/2015	Todd Molfenter et al.	Buprenorphine Prescribing Availability in a Sample of Ohio Specialty Treatment Organizations	Journal of Addictive Behaviors, Therapy & Rehabilitation, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4569134/pdf/nihms701827.pdf
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1/3/2017	Joseph Boden et al.	Modelling possible causality in the associations between unemployment, cannabis use, and alcohol misuse	Social Science & Medicine, vol. 175, https://www.researchgate.net/publication/312274077_Modelling_possible_causality_in_the_associations_between_unemployment_cannabis_use_and_alcohol_misuse
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6/7/2017	Ohio State Finance Committee	Testimony of: Dr. Doug Smith, Medical Director/CCO County of Summit ADM Board	http://search-prod.lis.state.oh.us/cm_pub_api/api/unwrap/chamber/132nd_ga/ready_for_publication/committee_docs/cmte_s_finance_1/testimony/cmte_s_finance_1_2017-06-07-1000_538/dougsmithhb49t60717.pdf
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2017	David Gilchrist	Weaning Off Opiates	https://masspaininitiative.org/files/DGilchrist_MassPIL_Spring2017.pdf
11/28/2018	Raj Gupta	Find Local Treatment	The Ohio State University Medical Center For the Ohio State Medical Center, Franklin County
1/4/2019	Summit County Public Health	Project Narrative - Summit County Public Health Community Medication Assisted Treatment Program	

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2017	National Academies of Sciences, Engineering, and Medicine	Pain Management and the Opioid Epidemic: Balancing Societal and Individual Benefits and Risks of Prescription Opioid Use	National Academies Press. https://doi.org/10.17226/24781
	Ohio Development Services Agency	Population Projections: County Totals	https://development.ohio.gov/files/research/P6090.pdf
2017	U.S. Department of Health and Human Services	National Survey of Substance Abuse Treatment Services (N-SSATS): 2017 Data on Substance Abuse Treatment Facilities	Substance Abuse and Mental Health Services Administration
3/24/2017	Michele Worobiec	Policy, Chapter 5: Court-Based Responses to the Opioid Crisis; Specialized Dockets Supreme Court of Ohio Columbus, Ohio	https://www.ohiobar.org/globalassets/advocacy/opiates-resource-page/5-worobiec.pdf
9/2018	Community Action Akron Summit	Combating the Opioid Epidemic in Summit County, OH: Pathways HUB Community Action	https://communityactionpartnership.com/wp-content/uploads/2018/09/The-Opioid-Crisis-and-Community-Actions-Response_Akron.pdf
1/11/2018	Cuyahoga County Medical Examiner's Office	Heroin/Fentanyl/Cocaine Related Deaths in Cuyahoga County: 2018 December Update	http://medicalexaminer.cuyahogacounty.us/pdf_medicalexaminer/en-US/HeroinFentanylReports/011119-HeroinFentanylReport.pdf
3/6/2019	Cuyahoga County Medical Examiner's Office	Cuyahoga County Medical Examiner's Office - Heroin/Fentanyl/Cocaine Related Deaths in Cuyahoga County 2019: February Update	http://medicalexaminer.cuyahogacounty.us/pdf_medicalexaminer/en-US/HeroinFentanylReports/CCMEOfFeb2019HeroinFentanylCocaine.pdf
2/1/2019	Cuyahoga County Medical Examiner's Office	Cuyahoga County Medical Examiner's Office - Heroin/Fentanyl/Cocaine Related Deaths in Cuyahoga County 2019 Draft January Update	http://medicalexaminer.cuyahogacounty.us/pdf_medicalexaminer/en-US/HeroinFentanylReports/020119-HeroinFentanylReport.pdf
3/9/2019	Roger E. Backhouse and Jeff Biddle	The Concept of Applied Economics: A History of Ambiguity and Multiple Meanings	https://read.dukeupress.edu/hope/article-pdf/32/Suppl_1/1/427135/01-Biddlebackhouse.pdf

11/29/2018	Summit County	Alcohol, Drug Addiction & Mental Health Services Board, Report on Opiate Epidemic Impact	SUMMIT_002053751
8/14/2018		Deposition Transcript of Donna Skoda	
11/28/2018		Deposition Transcript of Shane Barker	
11/15/2017	Public Children Services Association of Ohio	Best Interests for Abused and Neglected Children: Working Toward Reunification During the Opioid Crisis	http://www.pcsao.org/pdf/advocacy/ReasonableEffortsWhitePaperNov2017.pdf
2016	Public Children Services Association of Ohio	Ohio's Opiate Epidemic and Child Protection: 2016	SUMMIT_000085306
2015-2016	Public Children Services Association of Ohio	PCSAO Factbook, 12th Edition 2015-2016	SUMMIT_001874511
2016-2017	Public Children Services Association of Ohio	PCSAO Factbook, 13th Edition 2016-2017	SUMMIT_001874721
2016-2017	Public Children Services Association of Ohio	PCSAO Factbook, 13th Edition 2016-2017: Summit County	SUMMIT_001874719
12/2018	Public Children Services Association of Ohio	The Opioid Epidemic's Impact on Children Services in Ohio	SUMMIT_000115686
9/2016	Public Children Services Association of Ohio	The Opioid Epidemic's Impact on Children Services in Ohio	SUMMIT_000105844
1/17/2019	Network of Care	Alcohol, Drug Addiction & Mental Health Services Board, SUD Services	http://summit.oh.networkofcare.org/mh/services/subcategory.aspx?tax=RX-8450.1150
6/25/2018	Summit County ADM Board	Summit County Opioid Task Force: Quarterly Stakeholders Meeting	SUMMIT_001472861
6/20/2018		Summit County and City of Akron, Ohio Plaintiff First Amended Responses and Objections to Distributor Defendants' First Set of Interrogatories	
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2015	Summit County Children Services	2015 Annual Report: Bring Dads into the Picture	SUMMIT_000003942
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2017	Summit County Children Services	2017 Annual Report: Safety, Permanency, Well-Being. That's what we do ... every day	SUMMIT_002052855

12/27/2018	Summit County Opiate & Addiction Task Force	2018 Highlights	SUMMIT_002053857
12/27/2018	Summit County Opiate & Addiction Task Force	2019 Meeting Calendar	SUMMIT_002053885
12/17/2018	Summit County Opiate & Addiction Task Force	Public Quarterly Meeting Agenda	
12/17/2018	Summit County Opiate & Addiction Task Force	Public Quarterly Meeting: 4th Quarter – Year End	SUMMIT_002053822
2018	Summit County Public Health	Population Health Vital Statistics Brief: Vol. 3: Drug Overdoses, Apr. 1 – Apr. 30, 2018	SUMMIT_000027084
10/2017	Mark Rembert et al.	Taking Measure of Ohio's Opioid Crisis	C. William Swank Program in Rural-Urban Policy
2016	Summit County Public Health	Population Health Vital Statistics Brief: Vol. 3: Drug Overdoses, Jan 1 – Nov 30, 2016	SUMMIT_000037338
2017	Summit County Public Health	Population Health Vital Statistics Brief: Vol. 3: Drug Overdoses, Jan 1 – Nov 30, 2017	SCGHD_000001051
	Summit County	Critical Intervention Points for Change: Summit County	SUMMIT_000027115
6/25/2018	Summit County	Historical Revenues and Expenditures: Alcohol, Drug & Mental Health	SUMMIT_000111606
6/25/2018	Summit County	Historical Revenues and Expenditures: Common Pleas	SUMMIT_000111607
6/25/2018	Summit County	Historical Revenues and Expenditures: Children Services Board	SUMMIT_000111608
6/25/2018	Summit County	Historical Revenues and Expenditures: Executive	SUMMIT_000111609
6/25/2018	Summit County	Historical Revenues and Expenditures: Job and Family Services	SUMMIT_000111610
6/25/2018	Summit County	Historical Revenues and Expenditures: Medical Examiner Lab Fund	SUMMIT_000111611
6/25/2018	Summit County	Historical Revenues and Expenditures: Medical Examiner	SUMMIT_000111612
6/25/2018	Summit County	Historical Revenues and Expenditures: Prosecutor	SUMMIT_000111613
6/25/2018	Summit County	Historical Revenues and Expenditures: Sheriff	SUMMIT_000111614
6/25/2018	Summit County	Historical Revenues and Expenditures: Veteran's Service Commission	SUMMIT_000111615

3/20/2018	Summit County	Sequential Intercept Mapping and Action Planning for Opioid Epidemic Response	SUMMIT_000349556
2017	Waite, K., Deeken, A., Perch, S., & Kohler, L. J	Carfentanil and Current Opioid Trends in Summit County, Ohio	Academic Forensic Pathology, 7(4), 632–639, SUMMIT_000031143
11/19/2018		Deposition Transcript of Molly Leckler	
12/19/1996	Antonnette Graham, Norman Graham, et al.	Miracle Village: A Recovery Community for Addicted Women and Their Children in Public Housing	Journal of Substance Abuse Treatment, Vol. 14, No.3 pp.275-284, 1997 (accessed at https://www.journalofsubstanceabusetreatment.com/article/S0740-5472(97)00007-X/fulltext)
2017	Cuyahoga County Sherriff's Dept.	Cuyahoga County Corrections Center (CCCC) End of Year Report, 2017	CUYAH_000097408
2018		Calendar Year 2018 Funding Recommendations by Provider,	CUYAH_001350090
5/9/2017	Cuyahoga County Medical Examiner's Office	Cost of Heroin/Fentanyl Crisis, Fiscal Impacts to CCMEO Operations Update	CUYAH_001629584
6/20/2017	The Ohio Perinatal Quality Collaborative	Updates/Changes to the recommended OPQC NAS Protocol	https://opqc.net/sites/bmidrupalpopqc.chmcres.cchmc.org/files/NAS/OPQC%20Recommended%20NAS%20Protocol%20Changes%202017.pdf
9/10/2018	Cuyahoga County ADAMHS Board	A Leader in Combatting the Opioid Crisis in Cuyahoga County Update	http://adamhsc.org/pdf_adamhsc/en-US/(no%20numbers%20version%20for%20website)%20ADAMHS%20A%20Leader%20in%20Combating%20the%20Heroin%20Crisis%20UPDATE%20September.pdf
2018	Cuyahoga County ADAMHS Board	Provider Network Guide 2018	http://adamhsc.org/pdf_adamhsc/en-US/PosterChart2019%20WEB%20FINAL.PDF
2017	Summit County	SCCS 2017 Budget	SUMMIT_001128330
2018	Summit County	SCCS 2018 Budget	SUMMIT_000990286
2017	Summit County	2017 Summit Medical Examiner Annual Report	SUMMIT_000022439
	Summit County	Cost Narrative	SUMMIT_000028305
2017	Summit County	2017 ADM Budget Review	SUMMIT_000019668
	City of Akron	Akron Opiate Incidents.xlsx	AKRON_000004036
	Cuyahoga County Sheriff's Dept.	Jail.xls	CUYAH_012341077
2006-2017	Cuyahoga County	CCMEO 2006-2017 overdose data.xlsx	CUYAH_000099975
	Cuyahoga County	FTEs by Division.xls	CUYAH_001714366

	Cuyahoga County	Copy of payroll agency numbers2.xlsx	CUYAH_002426281
2013	Cuyahoga County	EE 2013 - 6 agencies.xlsx	CUYAH_002426282
2014	Cuyahoga County	EE 2014 - 6 agencies.xlsx	CUYAH_002426283
2015	Cuyahoga County	EE 2015 - 6 agencies.xlsx	CUYAH_002426284
2016	Cuyahoga County	EE 2016 - 6 agencies.xlsx	CUYAH_002426285
2017	Cuyahoga County	EE 2017 - 6 agencies.xlsx	CUYAH_002426286
	Cuyahoga County	pub11.xlsx	CUYAH_002426287
	Cuyahoga County	pub12.xlsx	CUYAH_002426288
2006-2017	Cuyahoga County	Total Expenditures - 2006-2017 - by subobject.xls	CUYAH_000018178
	City of Cleveland	Purchases of Naloxone and Mucosal Atomization	CLEVE_001627553
	City of Cleveland	Opioid Overdose Chart	CLEVE_000010988
2016-2018	City of Cleveland	Narcan Administered Summary 2016-May 16 2018.docx	CLEVE_000248973
2018	City of Cleveland	2018 Budget Book	CLEVE_000010463
11/13/2018		Deposition Transcript of C. Weiskittel	
11/20/2018		Deposition Transcript of G. Gingell	
9/2/2016	U.S. DOD, Office of the Secretary	32 CFR Part 199. TRICARE; Mental Health and Substance Use Disorder Treatment.	Federal Register, Vol. 81, No. 171, 61068-61098
7/15/2015	Noam Kirson, Amie Shei, J. Bradford Rice	The Burden of Undiagnosed Opioid Abuse Among Commercially Insured Individuals	Pain Medicine 2015; 16: 1325-1332 https://academic.oup.com/painmedicine/article/16/7/1325/1917718
7/1/2014	Edwinah Atusingwize, Sarah Lewis, Tessa Langley	Economic evaluations of tobacco control mass media campaigns: a systematic review	https://tobaccocontrol.bmj.com/content/24/4/320
2015	Summit County ADM Board	2015 Annual Report	SUMMIT_001054571
3/1/2017	Thomas Gilson, Hugh Shannon, Jaime Freiburger	The Evolution of the Opiate/Opioid Crisis in Cuyahoga County	Academic Forensic Pathology International www.afpjournal.com
2018	Jennifer Carroll, Traci Green, Rita Noonan	Evidence-Based Strategies for Preventing Opioid Overdose: What's Working in the United States	Centers for Disease Control and Prevention, https://www.cdc.gov/drugoverdose/pdf/pubs/2018-evidence-based-strategies.pdf
2018	Jocelyn Davis, Karen Frantz	Maternal-fetal Opiate Medical Home (MOMH)	https://www.ohiohospitals.org/OHA/media/Images/Patient%20Safety%20and%20Quality/Documents/Patient%20Safety%20Awareness%20Week/2018-PSW-Final-ppt-NR-Feb-12-Maternal-Opiate-Addiction-MOMH-OPSI-pptm.pdf

2016	National Academies of Sciences, Engineering, and Medicine	Ending Discrimination Against People with Mental and Substance Use Disorders: The Evidence for Stigma Change	https://www.nap.edu/catalog/23442/ending-discrimination-against-people-with-mental-and-substance-use-disorders
2013	Andrew Golub, Luther Elliott	The Opiate Pain Reliever Epidemic among U.S. Arrestees 2000-2010: Regional and Demographic Variations	NIH Public Access. J Ethn Subst Abuse
7/29/2011	James Livingston, Teresa Milne, Mei Lan Fang, Erica Amari	The effectiveness of interventions for reducing stigma related to substance use disorders: a systematic review	Addiction. 2012 Jan; 107(1): 39–50
1/10/2018	Ben Young, Sarah Lewis, et al.	Effectiveness of Mass Media Campaigns to Reduce Alcohol Consumption and Harm: A Systematic Review	Alcohol and Alcoholism, 2018, Vol. 53, No. 3
7/5/2018	Brendan Saloner, Kenneth Stoller, G. Caleb Alexander	Moving Addiction Care to the Mainstream – Improving the Quality of Buprenorphine Treatment	New England Journal of Medicine 379;1
12/22/2017	Dennis McCarty, Kelsey Priest, P. Todd Korthuis	Treatment and Prevention of Opioid Use Disorder: Challenges and Opportunities	Annual Review Public Health 2018. 39:525-41 https://www.annualreviews.org/doi/10.1146/annurev-publhealth-040617-013526
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2017	Luis Sordo, Gregorio Barrio, Maria Bravo, et al.	Mortality risk during and after opioid substitution treatment: systematic review and meta-analysis of cohort studies	BMJ 2017;357:j1500.
9/2016	IMS Institute for Healthcare Informatics	Use of Opioid Recovery Medications	IMS Institute for Healthcare Informatics
5/9/2018	Lisa Clemans-Cope, Douglas Wissoker, Marni Epstein	California County Facts Sheets: Treatment Gaps in Opioid-Agonist Medication-Assisted Therapy (OA-MAT) and Estimates of How Many Additional Prescribers Are needed	Urban Institute https://www.urban.org/sites/default/files/ca_county_fact_sheets_methodological_appendix.pdf
8/1/2018	Sheena Taha	Best Practices across the Continuum of Care for the Treatment of Opioid Use Disorder	Canadian Centre on Substance Use and Addiction
2017	R. Corey Waller	Changing the Orange County Addiction Treatment Ecosystem	The National Center for Complex Health and Social Needs, https://www.orangecountygov.com/DocumentCenter/View/9288/Changing-the-Orange-County-Addiction-Treatment-System-PDF?bidId=

2/1/2019	Qiushi Chen, Marc Larochelle, Davis Weaver, et al.	Prevention of Prescription Opioid Misuse and Projected Overdose Deaths in the United States	JAMA Network Open. 2019;2(2):E187621.
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	John Kasich, Tracy Plouck	Outlining a Pathway to Increase Prescribers with a DEA DATA 2000 Waiver	Ohio Department of Mental Health and Addiction Services
5/31/2018	Kyle Fee	The Opioid Epidemic and Its Effects	Federal Reserve Bank of Cleveland.
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2017	Cuyahoga County Board of Health	Drug-related Emergency Room Visits, Jan. 1 – Dec. 31, 2017; Data Brief: Annual Report 2017	
12/1/2008	Michael French, Ioana Popovici, Lauren Tapsell	The Economic Costs of Substance Abuse Treatment: Updated Estimates and Cost Bands for Program Assessments and Reimbursement	J Subst Abuse Treat. 2008 Dec; 35(4): 462–469.
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12/1/2015	The National Center on Addiction and Substance Abuse	Guide for Policymakers: Prevention, Early Intervention and Treatment of Risky Substance Use and Addiction	
8/24/2018	Summit County Jail Operations Advisory Commission	Report and Recommendations	SUMMIT_001773045

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4/10/2018	Mark Hurst, John Kasich, Tracy Plouck	The Opioid Epidemic in Ohio: How did we get here? Where are we going?	Ohio Mental Health & Addiction Services
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4/4/2015	Matrix Global Advisors, LLC	Health Care Costs from Opioid Abuse: A State-by-State Analysis	Matrix Global Advisors, LLC
6/1/2017	SAMHSA's Center for the Application of Prevention Technologies	Media Campaigns to Prevent Prescription Drug Misuse, Youth Marijuana Misuse, and Underage Drinking: Evidence of Effectiveness	https://www.samhsa.gov/capt/sites/default/files/capt_resource/media-campaigns-evaluation-information.pdf
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8/24/2018	The Editorial Board	States Show the Way on the Opioid Epidemic	The New York Times

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6/26/2018	Dave Yost	The Opioid Crisis: The impact on the Medicaid population is stretching the state's safety net	Ohio Auditor of State, https://www.ohioauditor.gov/publications/Special_Report_The_Opioid_Crisis.pdf
2/3/2017	Ohio Joint Study Committee on Drug Use Prevention Education	Report: February 2017	https://www.ohioattorneygeneral.gov/DrugUsePreventionEducation
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2018	County of Summit ADM Board	DRAFT SFY2018 Recovery Housing Provider Budget	SUMMIT_000956565
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1/1/2019	Congressional Budget Office	The Budget and Economic Outlook: 2019 to 2029	
4/1/2016	Economic Policy Institute	The cost of child care in Ohio	https://www.epi.org/child-care-costs-in-the-united-states/#/OH
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1/1/2016	IMS Institute for Healthcare Informatics	Price Declines after Branded Medicines Lose Exclusivity in the U.S.	https://www.iqvia.com/-/media/iqvia/pdfs/institute-reports/price-declines-after-branded-medicines-lose-exclusivity-in-the-us.pdf
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3/14/2018	SAMHSA/HHS	An Update on the Opioid Crisis	https://www.samhsa.gov/sites/default/files/aatod_2018_final.pdf
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2017	Substance Abuse and Mental Health Services Administration	National Survey of Substance Abuse Treatment Services (N-SSATS): 2017	
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	Harvoni	Clinical Results	https://www.harvoni.com/discover-harvoni/clinical-study-results
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6/1/2015	ASAM	The ASAM National Practice Guideline For the Use of Medications in the Treatment of Addition Involving Opioid Use	, https://www.asam.org/docs/default-source/practice-support/guidelines-and-consensus-docs/asam-national-practice-guideline-supplement.pdf
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